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The Huacas of Machu Picchu: Inca Stations for The Communion Between Humanity and Nature

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The *Huacas* of Machu Picchu: Inca Stations for the Communion Between Humanity and Nature

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

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ABSTRACT

THE *HUACA*S OF MACHU PICCHU: INCA STATIONS FOR THE COMMUNION BETWEEN HUMANITY AND NATURE

By Lee Anne Hurt, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2006

Major Director: Dr. James D. Farmer, Associate Professor, Department of Art History

Sacred stones, or *huacas*, at the ancient Inca city of Machu Picchu integrated human ritual with the surrounding landscape. I argue that *huacas* defined the relationship between nature and ritual practice by forcing an esoteric choreography which involved specific postures of the participant in order to visually orient humans to significant natural features of the surrounding environment. Inca stonemasons refined the natural form of the *huacas* so that they mimic the contours of prominent landscape features such as mountain peaks.

This dissertation documents 122 *huaca*s at Machu Picchu using maps of the site to record the exact location of each stone. Every *huaca* is described in detail, including notation of the specific cardinal orientation; lines of sight established by

reference points to prominent landscape features; and the specific posture required to view these lines of sight. The extensive number of *huacas* at Machu Picchu suggests a highly ritualistic city in which stones and caves were almost certainly considered metaphysical conduits between humans and the divine.

Introduction

Thesis Statement

This dissertation considers the manner in which sacred stones, or *huacas*, at the ancient Inca site of Machu Picchu were used to integrate human ritual with the surrounding landscape. The *huacas* defined the relationship between nature and ritual practice by choreographing specific postures of participants in order to visually orient them toward significant natural features of the surrounding environment. For this to happen, Inca stonemasons refined natural stone outcroppings in order to create *huacas*, which the Inca believed were metaphysical conduits between humans and the supernatural world.[1] Dozens of the *huacas* at Machu Picchu were carved in such a way that they mimic the contours of prominent landscape features such as mountain peaks. Many of the specific landscape features denote astronomical points on the horizon held sacred by the Inca. There are also several natural caves at the site containing *huacas* and Inca structures were often built over these caves. A popular example of this phenomenon is the cave below the *Torreón*, which Hiram Bingham called the "Royal Mausoleum" (Fig. 47).[2]

Existing scholarship has dealt extensively with the history and possible functions of the site as a whole, yet scholars have never thoroughly documented the

[1] The term *huaca* and its utilization in this study is further discussed later in this dissertation.
[2] Hiram Bingham, Machu Picchu: A Citadel of the Incas, 1930, reprint (New York: Hacker Art Books Inc., 1979), 87-97.

many *huacas* found throughout Machu Picchu. Five or six *huacas* are well-published and serve as standard points of interest on any given tour, but field research conducted between 1998 and 2003 has yielded 122 *huacas* that are visually incorporated into the design of the site.

This study documents the location, form, and orientation of the *huacas* at Machu Picchu and analyzes the ways in which they visually and symbolically interact with features of the surrounding natural environment. Data collected for this project provides information about the site that, to date, has not been compiled. This dissertation also documents the different views one gets of the natural environment when standing, sitting or kneeling in the vicinity of the *huaca*. The specific posture required to view the juxtaposition of the stone against the distant mountains suggests a ritualistic purpose for the *huacas*, as well as a symbolic connection between the human figure and stone sculpture as reflected in Inca ideology. Machu Picchu's popular image as a "mystical" and somewhat irrational "city in the clouds" is contradicted by its design and its use as a highly intellectual, rationally constructed place of communion between humans and the natural environment.[3]

Data collected from each *huaca* provides the basis for the analysis of ritual posture within the architectural spaces of Machu Picchu. Scholarship pertaining to

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[3] There are several books about Machu Picchu that do not provide a scholarly discussion of the site. Instead, the authors of these texts make broad statements about the site that are not substantiated by fact. For example, in Machu Picchu Forever, James Arévalo Merejildo-Mallku discusses the modern benefits of the site, as a place for meditation. While there is seemingly no harm in such books, I think they promote further conjecture concerning the royal estate. James Arévalo Merejildo-Mallku, Machu Picchu Forever: City of Pilgrims Spiritual Path (Cuzco: Peru: n.p., 2001).

Inca religion is used here to construct hypotheses concerning the ritual gestures of the Inca at shrine locations as well as the Inca worship of nature. Spanish and Andean chroniclers of the sixteenth and seventeenth centuries are consulted as well as modern scholarship discussing Inca religious practices.

While there are in fact dozens of *huacas* at Machu Picchu, most are not readily distinguishable from natural stone outcroppings, unless viewed from a precise angle or unless a specific bodily posture is taken. The esoteric nature of the *huacas* at Machu Picchu offers a more complex reading of the Inca and subsequently Inca architectural planning. I hypothesize that the choreographic effect of the *huacas* indicates that the site was intellectually organized despite its seeming randomness.

There are many definitions for the word *huaca*—including supernatural beings and sacred places as well as sacred objects. In this dissertation the term refers specifically to large stones that may be freestanding, embedded in architecture, or that form caves and have been minimally manipulated in some way by Inca stonemasons. Several scholars touch on the concept of "minimal modification." In this study, the phrase "minimal modification" is applied to stones already considered to be sacred entities, or *huacas* that were slightly modified by Inca sculptors in order to significantly change the sacred function of the stones. Specifically, minimal modification involves only a minor or small physical manipulation of the pre-existent form, such as a chip, abrasion or niche hewn into the natural stone surface. Typically, the stone retains up to ninety-nine percent of its original natural form. For

example, *Huaca* A2 (Figs. 13-17), probably was considered a sacred entity, or *huaca*, by the inhabitants of Machu Picchu before Inca stonemasons carved the top in order to visually align the stone with sacred mountain peaks such as Yanantin, San Miguel, and Pumasillo. The minimal modification of the existing stone would have reinforced the sacred nature of the stone to ritual participants. Furthermore it would have transformed the stone to better serve as a metaphysical conduit between humans and the supernatural.

Similar concepts relating to minimal modification have been presented by scholars such as Steven LeBlanc in his analysis of the Native American Mimbres culture and by Bryan Just in his discussion of the Maya culture. In his extensive study of the ancient American Mimbres culture, LeBlanc argues that Mimbres mortuary rituals involved punching holes, which he calls "kill holes," into the bottom of bowls, which are then inverted and placed on the heads of the deceased. He states, "The ritual killing of the bowl seems to have evolved out of the earlier practice of smashing the bowl and scattering the pieces over the grave."[4] This indicates that the small hole punched in the bottom of the mortuary ceramics was a minimal modification, rather than the more overt modification from earlier practice, in which the bowls were smashed to pieces. Bryan Just utilizes the phrase "minimal modification" in reference to Maya sculpture and ritual practices. Just posits that

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[4] Steven LeBlanc, The Mimbres People: Ancient Pueblo Painters of the American Southwest (London: Thames and Hudson, 1983), 76.

Maya sculptors knocked the noses off the faces of existing sculpture in order to ritually kill the stone representation of a Maya ruler.[5]

In The Stone and the Thread, César Paternosto also discusses the concept of minimal modification in relation to Inca sculpture, although he does not use the exact phrase. He states, "By modifying a cave, a sculptor incorporates it into the sacred ambient and also creates the possibility of a communication with the underworld of the *Ucu Pacha*."[6] Paternosto specifically applies this concept to the "Royal Mausoleum" at Machu Picchu: "In Machu Picchu's numinous environment, the sense of nature as a hierophany—stone and water as exteriorizations of the sacred—becomes even more evident. In the case of rocks that were especially venerated, the hierophany is intensified: the 'formalist' impulse that begins in the works at Kenko heightens the venerated rocks with sculptural modifications" (108). Regarding the stone inside the curved wall of the tower, he says, "Moreover, the rock has a natural, rectangular prominence accentuated by the sculptor, the long side of which is oriented in the direction of the solstice" (109).

The natural occurrence of large stone outcrops, caves, and the resulting *huaca*s at Machu Picchu may have manipulated ritual activities and the way in which Inca people worshipped. In his essay, "A Geomantic Model for the Interpretation of

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[5] Bryan Just, "Complexity in Ancient Maya Art," (paper presented in "Writing and Iconography in the Pre-Columbian World," a symposium sponsored by The Library of Congress, Washington, D.C., September 2005).

[6] César Paternosto, The Stone and the Thread: Andean Roots of Abstract Art (Austin: University of Texas Press, 1996), 105. Subsequent citations of Paternosto are noted in parentheses.

Mesoamerican Sites: An Essay in Cross-Cultural Comparison," John Carlson creates a model from which the "world-view" or cosmology of ancient Mesoamerican cultures could be studied using the ancient practices of Asian cultures, such as the Chinese, as an example of geomantic practice. According to Carlson the standard use of the term geomancy "connotes a divinatory art involving the interpretation of local topographical features for the purpose of properly locating and orienting the constructions of man—be they graves, houses, or entire cities."[7] Carlson's model for Mesoamerican sites can also be utilized to interpret Andean sites such as Machu Picchu.

Machu Picchu and the Inca Empire

The Inca Empire dominated the western part of South America from its rise to power in 1438 until the Spanish conquest of the Americas in the early sixteenth century. Machu Picchu, one of many cities within the vast Inca empire, reaches over eight thousand feet in altitude in the Andes mountain range. While Pre-Columbian scholars frequently discuss Machu Picchu, it is also one of the least understood of the ancient sites of the world. Due to the absence of a true Inca writing system, modern scholars must depend upon the chronicles of Spanish priests and soldiers, written after the conquest, in order to derive meaning from the art and architecture of the

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[7] John Carlson, "A Geomantic Model for the Interpretation of Mesoamerican Sites: An Essay in Cross-Cultural Comparison," in Mesoamerican Sites and World-Views, ed. Elizabeth P. Benson (Washington D.C.: Dumbarton Oaks, 1981), 144.

Inca. Furthermore, the Colonial Spanish never discovered Machu Picchu and only a very small number of people knew that the site existed before 1911 when Yale historian, Hiram Bingham came to the site and published his findings for the National Geographic Society. Today, scholars have the reports from Bingham's expeditions and the writings of Spanish chroniclers about the general religious and social practices of the Inca from which to draw conclusions about the seemingly enigmatic site. Archaeological studies of the site and thorough analyses of Inca architecture also help to explain the mysteries of Machu Picchu. Recent scholarship suggests that most of the construction began during the reign of the ninth Inca king, Pachacutec, between 1450 and 1470, and the site probably functioned as a royal retreat for the king and his entourage.[8] Functioning as an Inca royal retreat, Machu Picchu also would have been considered a religious center since the kings linked themselves so closely with the supernatural.

Field Work

Field research for this project was conducted at Machu Picchu in 1998, 2002, and 2003, resulting in approximately 500 images documenting 122 *huacas* within the central portion of the site. Ethnographic information about Inca ritual practice is a supporting source of information used in this study of the *huacas* at Machu Picchu,

[8] The theories concerning the use of Machu Picchu by the Inca king Pachacutec will be discussed in detail in chapter 1 of this dissertation.

but the main focus of this dissertation is a systematic analysis of the *huacas* of the estate. This dissertation documents 122 *huacas* at Machu Picchu using maps of the site to record the exact location of each stone (Maps 1, 3-9). Each *huaca* is described in detail, including notation of the specific cardinal orientation; lines of sight established by reference points to prominent landscape features; and the specific posture required to view these lines of sight. Photographs of the physical area surrounding each *huaca* are presented as well as images that illustrate possible postures that produce different views from the location of the *huaca.*

Previous Scholarship

Many scholars have written about Machu Picchu in the years since 1911 when Hiram Bingham first "discovered" and excavated the site. As one of the most popular sites in Andean history, Machu Picchu is mentioned frequently throughout the vast scholarship concerning the Inca. While some scholars mention the site briefly within a comprehensive study of Andean art and architecture, others place their focus entirely on the ancient site. There is also a considerable amount of scholarship pertaining to the religious beliefs and customs of the Inca, dating back to the sixteenth century.[9]

[9] There are many modern scholars who discuss the religious customs of the Inca culture. John Howland Rowe, "Inca Culture at the Time of the Spanish Conquest," in Handbook of South American Indians, ed. Julian Steward (Washington D.C.: Smithsonian, 1946), 183-330; Brian Bauer, The Sacred Landscape of the Inca: The Cuzco Ceque System (Austin: University of Texas Press, 1998); William Isbell, Mummies and Mortuary Monuments: A Postprocessual Prehistory of Central Andean Social Organization (Austin: University of Texas Press, 1997); Sabine MacCormack, Religion in the Andes:

There are many accounts of the Inca, which investigate the religious beliefs and customs associated with *huacas* in the Inca Empire. The Spanish chroniclers represent the first documentation of such practices and subsequent scholarship has created a lengthy list of those investigating the religion of the Inca. In 1991, Frank Salomon and George L. Urioste translated The Huarochirí Manuscript: A Testament of Ancient and Colonial Andean Religion.[10] This source, which is discussed further in chapter 2 of this dissertation, provides a great deal of information about the worship of *huaca*s in the Inca Empire.

The work of Felipe Guaman Poma de Ayala, an Andean chronicler and artist, is also carefully analyzed in this study.[11] He illustrated many instances in which the

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Vision and Imagination in Early Colonial Peru (Princeton: Princeton University Press, 1991). Susan Toby Evans and Joanne Pillsbury, eds., Palaces of the Ancient New World (Washington D.C.: Dumbarton Oaks, 2004). There are also studies that specifically discuss astronomy and the Inca worship of shrines, such as Brian Bauer and David Dearborn, Astronomy and Empire in the Ancient Andes: The Cultural Origins of Inca Sky Watching (Austin: University of Texas Press, 1995).

Gary Urton has written many texts concerning Inca religious practice using both the chronicles from the Colonial Spanish as well as ethnographic information from modern-day residents of the Andes region. Two books, The History of a Myth and Inca Myths are particularly pertinent to the current study of *huaca*s at Machu Picchu. These studies by Urton will be further discussed in chapter 2 of this dissertation. Gary Urton, The History of a Myth: Pacariqtambo and the Origin of the Inkas (Austin: University of Texas Press, 1990); Inca Myths (Austin: University of Texas Press, 1999).

Examples of studies by Spanish chroniclers can be found in: Juan de Betanzos, Narrative of the Incas, trans. and ed. by Roland Hamilton and Dana Buchanan (Austin: University of Texas Press, 1996); Garcilasco de la Vega, el Inca, Royal Commentaries of the Incas and General History of Peru, translated by Harold V. Livermore (Austin: University of Texas Press, 1966); Roland Hamilton, ed. and trans., Inca Religion and Customs by Father Bernabe Cobo, with a foreword by John Hamilton Rowe (Austin: University of Texas Press, 1990); Victor Wolfgang von Hagen, ed. and introduction, The Incas of Pedro de Cieza de Leon, trans. by Harriet de Onis (Norman: University of Oklahoma Press, 1960).

[10] Frank Salomon and George L. Urioste, trans., The Huarochirí Manuscript: A Testament of Ancient and Colonial Andean Religion, with annotations and introduction by Frank Salomon (Austin: University of Texas Press, 1991).

[11] Felipe Guaman Poma de Ayala, El primer nueva coronica y buen gobierno [1615], critical edition by John V. Murra and Rolena Adorno, trans. and textual analysis of Quechua by Jorge L. Urioste, 3 vols. (Mexico City: Siglo Veintiuno, 1980).

Inca were sitting, kneeling or standing in prayer around *huacas*. For instance, one of the drawings illustrates an Inca man and woman kneeling in front of a *huaca* (fig. 2). Guaman Poma clearly illustrates one of the three postures that the Inca assumed at certain *huacas*. He also illustrated many examples of the Inca standing and in seated positions in which the legs are brought up and crossed in front of the body. The seated position is taken by living humans at certain times and at other times mummies have been arranged in such a position. This dissertation argues that the Inca assumed different bodily postures at *huaca* locations in order to view alignments with the landscape, a point supported by the illustrations presented in the chronicles of Guaman Poma.

Certain Andean scholars mention specific *huaca*s in their own studies but the discussion never goes beyond one or two examples. For instance the "Sacred Stone" near the base of Huayna Picchu has been documented often. Figure 158 illustrates the relationship between the stone and the mountain behind it, which it mimics. Rebecca Stone-Miller, among many others, has provided the same illustration in her book, Art of the Andes.[12] Careful review of the existing literature clearly

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[12] Rebecca Stone-Miller, Art of the Andes, (London: Thames and Hudson, Ltd., 1995), 190. The following authors also provide cursory descriptions of Machu Picchu and they usually include an example of a sacred monument such as the *Intihuatana* or the "Sacred Stone." Adriana von Hagen and Craig Morris, The Cities of the Ancient Andes (London: Thames and Hudson Ltd., 1998); Michael E. Moseley, The Incas and their Ancestors: The Archaeology of Peru, rev. ed. (London: Thames and Hudson, 2001); Nigel Davies, The Ancient Kingdoms of Peru (London: Penguin Books, 1997); Susan A Niles, "Inca Architecture and the Sacred Landscape," and Colin McEwan and Maarten van de Guchte, "Ancestral Time and Sacred Space in Inca State Ritual," in The Ancient Americas: Art from Sacred Landscapes, ed. Richard F. Townsend (Chicago: The Art Institute of Chicago, 1992), 346-357, 358-371.

demonstrates that while scholars discuss Machu Picchu frequently in their studies of the Inca culture there is not a systematic analysis of every *huaca* at the royal estate.

Of the twentieth-century literature written about Machu Picchu, the documentation of the excavations conducted by Hiram Bingham, and his team from Yale, proved to be extremely useful in writing this dissertation. In the years following the discovery of the site in 1911, Bingham wrote several articles for various periodicals about his work at Machu Picchu.[13] It was not until much later, in 1930, that Bingham wrote his first book about the expeditions to the site. Entitled Machu Picchu: A Citadel of the Incas, it is a compilation of the articles mentioned above and discusses his findings from the earlier expeditions to the site. It contains excellent drawings and photographs from the excavations of the site by Bingham and his team, as well as many maps of the site as he found it, before it became one of the most popular tourist attractions in the world. Of particular interest to scholars investigating the *huacas* of Machu Picchu is chapter 4 entitled, "Architecture and Masonry of Machu Picchu and Its Clan Groups." In it the author discusses the use of boulders for altars and the use of niches for mummy bundles.

Another book by Bingham, Lost City of the Incas: The Story of Machu Picchu and Its Builders, written in 1948, contains much of the same information as the

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[13] Examples include: Hiram Bingham, "The Discovery of Machu Picchu," Harper's Magazine 127 (1913), 709-719; "In the Wonderland of Peru," National Geographic 24 (1913) 387-573; "The Story of Machu Picchu," National Geographic 27 (1915) 172-217; "Types of Machu Picchu Pottery," American Anthropologist 17 (1915) 257-271.

above-mentioned study.[14] It is clear that in Lost City of the Incas, Bingham's notoriety as the discoverer of the lost city of Machu Picchu was well established and the author romanticizes many aspects of the expeditions. At certain points it even seems to read more like an adventure novel than a record of official expeditions.

Recent scholarship often overlooks or omits certain theories presented by Bingham in his early reports, and alternative hypotheses are presented in light of new archaeological evidence or ethnographic information concerning the Inca. It is highly possible that certain scholars, in particular archaeologists, do not take Bingham seriously because he was not, as they so often point out, an archaeologist but rather an explorer and an historian. Hugh Thomson—an explorer himself—notes in The White Rock, that archaeologists are quick to dismiss theories presented by those who are not trained in the field of archaeology.[15] One example of this is Bingham's theory that Machu Picchu was a citadel of the Inca, largely based on the remote location of the site and the inclusion of a drawbridge on the western side of the estate. This theory has since been thrown aside for the more plausible idea of a winter retreat for the king and his entourage.

In Portrait of an Explorer: Hiram Bingham, Discoverer of Machu Picchu, Alfred, one of Bingham's sons, provides insight into the explorer's life and work on

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[14] Hiram Bingham, Lost City of the Incas: The Story of Machu Picchu and Its Builders, 1948 reprint (Clinton Massachusetts: The Colonial Press Inc., 1963).
[15] Hugh Thomson, The White Rock: An Exploration of the Inca Heartland (Woodstock, New York: Overlook Press, 2001), 23.

his many expeditions to Peru.[16] Alfred Bingham discusses the fact that his father did not actually write up any of his discoveries at the site until sometime after the second expedition to Peru. This study of the Yale explorer provides personal letters written by Hiram Bingham during his initial exploration of Machu Picchu. These letters, as the son indicates, are somewhat contradictory to some of Hiram Bingham's later books on the subject, such as the fact that Bingham did not spend much time at Machu Picchu initially because he still did not believe that he had found the "lost city of the Incas." Alfred Bingham also points out that the site was actually discovered by a man named Agustin Lizarraga a few years prior to Bingham. This fact was included in Hiram Bingham's earlier accounts of the site but, as his son indicates, was omitted from Bingham's 1948 book, Lost City of the Incas. Omissions like this may add to the tendency to discredit Bingham by modern scholars.

In 1961 Herman Buse provided another study devoted to the ancient Andean site in his book, Machu Picchu.[17] Buse provides an excellent analysis of the site but only the major monuments are discussed at any length. When the subject of *huacas* arises, the author focuses on the *Intihuatana*, the "Temple of the Three Windows," the "Temple of the Moon," and the many fountains at the site. Smaller stone outcroppings are not listed or illustrated in Buse's study.

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[16] Alfred M. Bingham, Portrait of an Explorer: Hiram Bingham, Discoverer of Machu Picchu (Ames: Iowa State University Press, 1989).
[17] Hermann Buse, Machu Picchu (Lima: Colleccion "Nueva Cronica," 1961).

Johan Reinhard wrote Machu Picchu: The Sacred Center in 1991, which represents an outstanding study of Machu Picchu.[18] Reinhard provides information about the neighboring mountains in the area of Machu Picchu and the significance of mountain worship for the Inca. He also mentions the great importance of the Urubamba River that wraps around the base of the mountain of Machu Picchu. Both the mountains and the river were sacred to the Inca as well as the many *huacas* at the site. Reinhard, like many others, focuses on the major monuments, such as the *Intihuatana*, the "Sacred Rock" near the base of Huayna Picchu, the *Torreón*, and the "Temple of the Moon" on the slopes of Huayna Picchu.

In The Meaning of Machu Picchu, James Westerman provides a detailed analysis of the excavation of the "Condor Group" at Machu Picchu, which he conducted in 1995.[19] The author also includes information about the major monuments at the site, such as the *Torreón* and the *Intihuatana*, but smaller *huacas* are not mentioned. In his explanation of the shrine of the "Condor Group," Westerman provides a detailed analysis of the "Condor Stone," as it is popularly known today.

In 2000, Kenneth Wright and Alfredo Valencia Zegarra wrote Machu Picchu: A Civil Engineering Marvel.[20] While this book is primarily a study of hydraulics and

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[18] Johan Reinhard, Machu Picchu: The Sacred Center (Lima: Nuevas Imágenes S.A., 1991).
[19] James S. Westerman, The Meaning of Machu Picchu (Chicago: Westridge Publishing, Inc., 1998).
[20] Kenneth R. Wright and Alfredo Valencia Zegarra, Machu Picchu: A Civil Engineering Marvel (Reston, Virginia: American Society of Civil Engineers, 2000).

agriculture, it does warrant some attention by art historians. A foreword, written by the archaeologist Alfredo Valencia Zegarra, suggests that this is a scholarly study and the text includes useful maps of the site as well as descriptions of the major monuments such as the *Torreón* and the *Intihuatana*. As a supplement to this engineering project, Ruth M. Wright and Alfred Valencia Zegarra wrote The Machu Picchu Guidebook in 2001.[21] This book not only provides an excellent walking tour, geared towards both tourists and more serious students of the site, but also contains information concerning Machu Picchu that only scholars like Valencia can provide because he has spent many years studying the site.

A number of books also discuss the estate within comprehensive surveys of Andean art and architecture. In 1980, Graziano Gasparini and Luise Margolies wrote Inca Architecture, in which there is a lengthy discussion of Machu Picchu. Like many other texts, it includes a discussion of the possible uses for the ancient site. As others have postulated, Gasparini and Margolies state that the site may have been utilized as a fortification and/or ceremonial center.[22] This illustrates the fact that as late as the 1980s some scholars were still speculating about the purpose of the Inca site. While they do provide an analysis of the integration of architecture and the natural environment at Machu Picchu—discussing monuments such as the

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[21] Ruth M. Wright and Alfredo Valencia Zegarra, The Machu Picchu Guidebook: A Self-Guided Tour (Boulder, Colorado: Johnson Books, 2001).
[22] Graziano Gasparini and Luise Margolies, Inca Architecture, trans. by Patricia J. Lyon (Bloomington: Indiana University Press, 1980), 87.

Intihuatana and the *Torreón*—the other rock outcroppings and stone carvings at the site are absent from the analysis provided by Gasparini and Margolies.

Two years later, in 1982, John Hemming and Edward Ranney wrote and illustrated Monuments of the Incas, a very valuable source for scholars conducting research pertaining to Machu Picchu. Many scholars cite it because it is such an excellent study of Inca architecture, particularly at Machu Picchu. Hemming discusses *huacas* as they appear throughout the Inca Empire and he documents major examples, such as the "Temple of the Moon," on Huayna Picchu. While he does not discuss all of the rock outcroppings at Machu Picchu, Hemming states that they "abound here," indicating that there is the opportunity for further study of the natural rock outcroppings and sculpture at Machu Picchu.[23]

Ann Kendall provides another analysis of Machu Picchu in her book from 1985 entitled Aspects of Inca Architecture: Description, function and chronology. While this is a general study of the site, Kendall illustrates and describes the "Temple of the Moon" in some detail.[24] She also analyzes the Spanish chroniclers and their discussion of *huacas* throughout the Inca Empire. Although the Spanish chroniclers never reached Machu Picchu, their descriptions of *huacas* elsewhere provide insight into the general functions of *huacas* and the Inca culture's worship of deities.

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[23] John Hemming, Monuments of the Incas, with photographs by Edward Ranney, (Boston: Little, Brown and Company, 1982), 130.
[24] Ann Kendall, Aspects of Inca Architecture: Description, function and chronology, 2 vols. (Oxford: B.A.R., 1985), 360-364.

In 1986 Margaret Greenup MacLean wrote a doctoral dissertation entitled "Sacred Land. Sacred Water: Inca Landscape Planning in the Cuzco Area." In this study of the Cuzco region, MacLean focuses on eight sites including Runcu Raccay, Sayac Marka, Chancha Bamba, and Machu Picchu. She includes a general discussion of the "sacred" in the Inca belief system and the way in which it applies to the architecture of the Inca Empire. MacLean also provides an analysis of the integration of architecture into the natural environment as it applies to the entire Inca landscape. Her discussion provides ten different types of interaction between architecture and nature, which include "possible shrine areas" and "carved, freestanding features."[25] While she does provide this analysis, it should be noted that MacLean does not give specific examples from Machu Picchu in her discussion. Finally, in her notes for her conclusion, MacLean calls for further research, stating that "fuller photographic documentation of all the sites" should be considered by future scholars.[26]

Van de Guchte's Study of Inca Stone Sculpture

In his dissertation from 1990, "Carving the Inca World: Inca Monumental Sculpture and Landscape," Maarten van de Guchte investigates carved stones throughout the portion of modern day South America that was once occupied by the

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[25] Margaret Greenup MacLean, "Sacred Land. Sacred Water: Inca Landscape Planning In the Cuzco Area" (Ph.D. diss., University of California, 1986), 96.
[26] This comment by MacLean is further proof that the documentation provided in this dissertation is necessary to scholars (MacLean, 145).

Inca Empire. He devotes a significant portion of his analyses to the term *huaca* and the many applications of the word throughout the texts of the Colonial period. Chapter 9 of his dissertation includes an excellent summary of the various definitions of *huaca* presented by the chroniclers of Inca history.[27] Of particular scholarly note is the appendix to the dissertation in which van de Guchte lists all of the carved rocks that he considered in his study. In his discussion of Machu Picchu he states that he has considered the rocks as one "cluster" instead of recording them as individual shrines.[28]

In his review of previous scholarship pertaining to Inca carved stones, van de Guchte discusses the work of 20th-century Pre-Columbian scholars such as Max Uhle, Adolph Bandelier, Walter Kreickenberg, George Kubler, and John Rowe, as well as the studies conducted by Hiram Bingham. As early as 1910, Max Uhle and Adolph Bandelier began studying Inca monumental sculpture, but did not provide considerable mention of specific *huacas*. In fact, van de Guchte found that carved rocks were rarely mentioned until the early 1960's with the work of George Kubler, who provided a brief discussion.[29]

The basic premise from which van de Guchte begins his study assumes three aspects of Inca stonework. He states: "In this study carved rock complexes are

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[27] Maarten J. D. van de Guchte, "'Carving the World': Inca monumental sculpture and landscape" (Ph.D. diss, University of Illinois at Urbana-Champaign, 1990), 237-271.
[28] Van de Guchte, 359.
[29] George Kubler, The Shape of Time: Remarks on the History of Things. (New Haven: Yale University Press, 1962), 320.

considered to be manufactured by the Incas or by specialists working on orders given by the Incas, if they display the following characteristics: 1. They occur in sites which have been proven, by virtue of archaeological research, to be solely and exclusively occupied by the Incas; 2. They occur in sites, which show a direct association between architecture, diagnosed as Inca, and carved rocks; 3. They show stylistic properties, which are similar or formally related to diagnostic traits present in the carved rock complexes mentioned in points 1. and 2."[30] This precise definition for carved stones has been adopted for use in the present study.

Van de Guchte further defines the objects that he studied as, "Large fieldstones or bedrock outcroppings, carved by human hand" (27). He was precise when defining the boundaries of his discussion of Inca carved stones and stones incorporated directly into Inca architecture, although certainly manipulated by humans, were not considered, nor were moveable objects made out of stone (28). My study of *huaca*s at Machu Picchu has been conducted under the assumption that the stones designated as *huaca*s have been manipulated in some way by humans. The amount of carving of each *huaca* is difficult to determine in many cases; a constraint van de Guchte also noted (2).

In his discussion of the stylistic origins of Inca sculpture, van de Guchte says that, "the inspiration for the geometric style in Inca monumental sculpture, as

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[30] Van de Guchte, 26. Subsequent quotes taken from the same author are noted in parentheses for the remainder of this section.

displayed on bedrock and boulders in the field, appears to have come solely from Tiahuanaco" (47-49). He concludes his discussion of Inca sculpture stating that, "By carving rocks, the Incas effectively molded their world. The patterns on the rocks succinctly and directly helped to replicate icons of Inca ideology. As such the carved rocks served a purpose, similar to textiles in Andean society, as vehicles for the dissemination of an Andean catechism. Actually, many aspects of carved rocks appear to have been inspired by a vocabulary and grammar of formal elements, stemming from the art of textile."[31]

During his analysis of the term *huaca*, van de Guchte concludes that, "an important distinction should be made between carved rock and *huaca*. Commonly all carved rocks are considered to be *huaca*s in the archaeological literature, but it remains to be seen if this is the case. For reasons of clarity, I will define the concept *huaca* here as 'a material object or location which received ritual attention, and the 'force' which inhabited that object or location" (345). He further states, "Generally a stone *huaca* emphasizes or delineates a segment of ritual space. As such it functions as a symbol in a cosmological scheme, elements of which give distinct meanings to points of landscape" (345). He concludes with: "Finally, an important distinction between a *huaca* and a carved rock is that the 'wholeness' of a *huaca* extends beyond

[31] Van de Guchte, 50. César Paternosto makes similar assertions about the connections between Inca carved stones and textiles in his book, The Stone and the Thread.

its materiality. A *huaca* is not necessarily fixed in space and time, while a carved rock logically is" (345-346).

Van de Guchte's analyses of Inca stones and specifically the term *huaca* provide a good point of departure for the present study of *huaca*s at the site of Machu Picchu. Chapter 1 of this dissertation provides important information regarding the ninth Inca king, Pachacutec, and his role in the design and creation of Machu Picchu. The second chapter of this study investigates the sacredness of the landscape in Inca ideology, specifically the strong associations made between caves and mountains to *huaca*s. Chapter 3 provides a systematic analysis of the *huaca*s of Machu Picchu. The conclusions drawn regarding the *huaca*s of Machu Picchu illustrate that Pachacutec utilized the site according to a calculated plan that clearly validated his role as the king of the Inca people.

Chapter 1: Pachacutec and Machu Picchu

Introduction

In the century since Bingham's discovery of Machu Picchu, scholars have theorized that the site served as a fortress, a university of idolatry, and a royal retreat.[32] Throughout the years, the city has also been viewed as a mystical and somewhat irrational "city in the clouds" that was constructed without any kind of systemized plan or aesthetic ideology. Archaeological and architectural evidence, as well as ethnographic accounts from the Colonial period clearly indicate the contrary, however. Modern scholarship indicates that the site was constructed between 1450 and 1470, during the reign of the ninth Inca king, Pachacutec.[33] This chapter illustrates the influence that Pachacutec had in the creation of Machu Picchu. It is also possible that certain *huaca*s were purposefully manipulated throughout the site according to a plan devised by Pachacutec himself.

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[32] Bingham hypothesized that the site was a fortress in Machu Picchu: A Citadel of the Incas, written in 1930. In 1999, Oscar Chara Zereceda wrote a study of Machu Picchu entitled Machupicchu Universidad Inka (Cusco: Centro de Estudios Regionales Andinos Bartolome de las Casas). Zereceda's theory that priests and initiates were the occupants of the site remains somewhat popular today despite new findings by Burger and Salazar that indicate that Machu Picchu was a royal retreat.

[33] Richard L. Burger and Lucy C. Salazar, eds., Machu Picchu: Unveiling the Mystery of the Incas, (New Haven: Yale University Press, 2004), 24-25. Also note that this spelling of the ninth Inca king's name will be used in this dissertation. For more details regarding the king's entire name and subsequent name change when he ascended to the throne, please see Betanzos, 76 and Hamilton, 133.

An exhibition entitled "Machu Picchu: Unveiling the Mystery of the Incas," opened in January of 2003 at the Peabody Museum at Yale University. The exhibition generated a renewed interest in the site of Machu Picchu, which resulted in articles in popular magazines such as Smithsonian and Time.[34] There is also a book, similarly titled Machu Picchu: Unveiling the Mystery of the Incas, which is edited by the curators of the exhibition, Richard Burger and Lucy Salazar. As I have previously mentioned, Burger and Salazar believe that Machu Picchu was a royal retreat for the ninth Inca king, Pachacutec.[35] The authors also discuss the religious aspect of Machu Picchu noting that the evidence of "numerous shrines" at the site exclude it from categorization as simply a *tambo*, or way station, and further promote the theory of the site as a royal retreat.[36]

Pachacutec: Architectural Designer of the Inca Realm

Spanish chroniclers from the sixteenth and seventeenth centuries provide compelling evidence that Pachacutec was a significant participant in royal architectural planning and building projects. There are two important aspects of Pachacutec's life that are particularly significant to the study of *huaca*s at Machu Picchu:

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[34] Fergus M. Bordewich, "Winter Palace: Unraveling the Mysteries of Machu Picchu," Smithsonian 33 no. 12 (March 2003): 106-115; Jeffery Kluger, "Spiritual Retreat," Time 161 (2003), 46-47. The only purpose I have in including these examples of popular literature is to illustrate the renewed interest in Machu Picchu following the Yale exhibition opening in 2003.

[35] In the introduction of the book, Burger and Salazar state that they presented the theory of Machu Picchu as a royal estate in 1982. Burger and Salazar, eds., 24-25.

[36] Burger and Salazar, eds., 25.

1) Certain chroniclers credit Pachacutec with the ultimate victory over the Chanca army and with creating a legend about the victory in order to legitimize his role as king. Of particular interest is the part of the legend that says that the god Viracocha created an army from stones to aid the Inca in their battles with the Chanca people.

2) The chroniclers also provide evidence that Pachacutec was especially involved in planning ceremonial architecture and even dictating the locations and forms of certain *huacas*.

Many chroniclers attribute Pachacutec with the ultimate victory over the Chanca people and certain chroniclers recount a legend of the Inca army being aided in battle by an animated stone army that was created by the god Viracocha. Unfortunately, the chroniclers do not come to a consensus in their accounts and therefore the exact nature of the battle or the legends of that battle will never be fully proven by historians.[37] It is highly possible, however, that a king like Pachacutec could have appropriated such a legend in order to legitimize his sovereignty.

The legend of the Inca's victory over the Chanca army is thoroughly discussed in Maria Rostworowski's, History of the Inca Realm, written in 1999. This legend is particularly significant to the present study because of the connection with

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[37] Maria Rostworowski analyzed the chronicler's accounts and found that twelve of them attribute Pachacutec with the victory over the Chanca people and she concludes that he was indeed the king responsible for this victory. Maria Rostworowski de Diez Canseco, History of the Inca Realm, trans. by Harry B. Iceland (Cambridge: Cambridge University Press, 1999), 29-30.

huacas. Several accounts of the Inca army's defeat of the Chancas include mention of a stone army. *Pururauca* is the term used to describe the stone army, and Rostworowski glosses this word as "stones that become mythical warriors."[38] In her analysis of the term she says, "The fame of the *pururaucas* was widely disseminated among the enemies of the Incas, and on occasion chiefs would surrender, fearful of confronting this veteran army."[39] Pachacutec may have used this legend of a stone army to show his connection with the supernatural world. In other words, according to Pachacutec the god Viracocha clearly favored the Inca by providing them with a supplemental army to ensure victory over the Chanca army.[40]

Pachacutec also took an active role in designing and creating religious architecture in the Inca realm. According to the sixteenth-century chronicler, Juan de Betanzos, Pachacutec went to the trouble of hand-selecting stones for his sacred temples and creating models of temples from clay.

In his account of the design and creation of the temple of the sun in Cuzco, Betanzos says, "After that they left the place where he and his people were and, at the place where the temple was built, Inca Yupanque himself with his own hands took

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[38] Rostworowski, 230.
[39] Rostworowski, 26.
[40] In her study of religion in the Andes Sabine MacCormack discusses the fact that several chroniclers attribute the legend of the *pururauca's* to Pachacutec's cleverness in creating propaganda to legitimize his role as king. José de Acosta, a missionary writing in the late sixteenth century, even credits Pachacutec for his ingeniousness in inventing the story of the *pururaucas*. MacCormack also says that other chroniclers, including Bernabé Cobo in 1653, gave the same re-interpretation of the Inca legend. She cites Acosta in Historia natural y moral de las Indias (Seville, 1590), 6.21, 308; Bernabé Cobo in Historia del Nuevo mundo (Madrid, 1653), 12.10, 75a. Sabine MacCormack, Religion in the Andes: Vision and Imagination in Early Colonial Peru (Princeton: Princeton University Press, 1991), 28.

the cord, measured and laid out the plan of the temple of the Sun. On finishing, he left there with his people and went to a town called Salu, almost five leagues from this city, where they have a quarry. He measured the stones for building this temple, after which the people of the nearby towns worked the stones pointed out to them until there were enough to build this temple…On arrival they went to work on it *just as Inca Yupanque had designed and imagined it. He always supervised the work himself* along with the other lords. They watched how it was being built, and Inca Yupanque along with the others worked on the building" (emphasis mine).[41] Later in his account of Pachacutec Betanzos says, "Inca Yupanque outlined the city and had clay models made just as he planned to have it built."[42]

Pachacutec's involvement in the creation of *huaca*s can be seen in another quote from Betanzos' account of the temple of the sun. He says, "Therefore, Inca Yupanque had placed in the middle of the square of Cuzco, where the pole of the gallows is now, a stone made like a sugarloaf pointed on top and covered with a strip of gold. He also had this stone worked the same day he ordered the statue of the Sun made."[43]

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[41] Betanzos, 45.
[42] Betanzos, 69.
[43] Betanzos, 47-48.

Conclusions

As the accounts from the Spanish chroniclers illustrate, Pachacutec assumed an active role in royal architectural planning and building projects in Cuzco. There is also mention of his involvement in the planning of Pisac and Ollantaytambo.[44] Although the chroniclers do not ever mention Machu Picchu, or any association between the site and Pachacutec, modern scholars have concluded that Machu Picchu was built between 1450 and 1470, during the reign of Pachacutec. Therefore it is entirely possible that the king's participation in the design of Machu Picchu was similar to the way the chroniclers describe his active role in the design and creation of royal architecture elsewhere in the Inca realm.

[44] Rostworowski, 188-189.

Chapter 2: Inca *Huacas* and Sacred Landscape

Introduction

This chapter presents various historical and environmental contexts in which the *huacas* of Machu Picchu can be studied and includes further investigations of certain colonial-period authors of indigenous chronicles and the modern interpretations of those chronicles. Also considered are several contemporary scholars who have written their own analyses of the sacred Andean landscape and the ways in which the ancient religion continues in modern-day societies of Peru.

There are many colonial-period authors who sought to interpret and chronicle the lives and religious practices of the Inca during the seventeenth and eighteenth centuries. Two major sources of literature pertaining to indigenous religions of the Andean cultures during the colonial period are the anonymously written Huarochirí Manuscripts and the illustrated texts of Guaman Poma de Ayala. These two colonial-period manuscripts are specifically investigated here because they come the closest to being purely indigenous texts, despite the overwhelming influence of the Spanish conquistadors.

The modern theories presented by Johan Reinhard concerning mountain worship in Inca religion, and Gary Urton's hypotheses concerning caves and the Inca creation myth are also discussed. Reinhard and Urton provide modern perspectives

and observations about colonial-period literature and ethno-historical data that can be applied to the study of Machu Picchu and the Inca concept of the sacred landscape. Specifically, these two authors illustrate the veneration that Andeans had, and still have today, for natural phenomena such as mountain peaks and caves.

The Huarochirí Manuscript – Discussion of *Huacas* and Mountain Deities

A discussion concerning Inca mythology would not be complete without a brief synopsis of the Huarochirí Manuscript, which was translated from Quechua and thoroughly analyzed by Frank Salomon and George L. Urioste in 1991. In the "Introductory Essay" Salomon discusses the general outline of the Huarochirí manuscript as well as the social and political context from which it was created. As he explains, this is the only Inca mythological text written in the Inca language, Quechua.[45] The original title, author and date are missing from the manuscript, but it was written under the direction of Father Francisco de Avila sometime around the turn of the seventeenth century.[46] Although scholars are uncertain of the exact author, Salomon says, "It may contain the words of a native writer or editor whom Avila gave some leeway in compiling the text" (2).

In his explanation of the complex text of the Huarochirí manuscript, Salomon makes many references to the importance of *huacas* to the people who inspired the

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[45] Frank Salomon, 1.
[46] Salomon, 1. There is also a discussion of the dating of the manuscript on page 24. Subsequent quotes from this source are noted in parentheses.

manuscript. He says, "It unfolds the splendor of ceremonies that prehispanic priests devoted to a landscape alive with the diverse sacred beings called *huacas*" (1). Salomon further states, "These myths relate intimately to the real-life landscape and the historic conjuncture that generated them. For one thing, the deities themselves are land features and local climatic forces" (11). He also warns that the text may be a result of syncretism due to the lapse in time between the Spanish conquest and the writing of the manuscript. He states, "It is important to remember that by the date when this manuscript was written the cults of the *huacas* had coexisted with Christianity for a whole lifetime" (3).

Salomon discusses the deity Paria Caca, a supernatural being whose association with mountains is particularly important to the present discussion. He states, "Like many great Andean deities, he (Paria Caca) is a mountain, a majestic double-peaked snowcap visible on the eastward horizon from the heights of Huarochirí" (6). The very same association could be applied to the snowcapped peak of the mountain Veronica, as it is viewed in the northeast from Machu Picchu.

A significant amount of Salomon's introduction to the translation of the Huarochirí Manuscript pertains directly to the concept of the *huaca* in ancient Andean ideology. Although Salomon seems to have written this analysis independently of van de Guchte's excellent survey of the term, Salomon does raise some interesting points concerning the complex term. According to him "The Huarochirí manuscript is in large measure a reading-out of its space. The horizon,

not the cosmos—geography, not metaphysics—poses the questions to which its most vibrant deities give answers. Andean numina lodge in places or placed objects: mountains, springs, lakes, rock outcroppings, ancient ruins, caves, and any number of humanly made objects in shrines: effigies, mummies, oracles, and so forth" (16). Salomon then proceeds to give many, but not all, of the definitions for the term "*huaca*" that chroniclers, such as Garcilaso Inca de la Vega, recorded in the seventeenth and eighteenth centuries (16-24). He notes that the Huarochirí manuscript, "tells a good deal about the priesthoods, but not much about rules regulating lay worshipers' individual or group affiliation to *huacas*" (17).

As previously noted, Father Avila was the historic figure who can be the most closely linked with the Huarochirí manuscript; therefore it is important to discuss briefly this Spanish priest's definition of the term *huaca*. According to Salomon, "Clearly *huacas* are living beings, persons in fact. Avila and other Christian seventeenth-century observers seem to think of the *huacas* as real beings, material in form but animated by demonic spirit. When Avila applied the terms 'god' and 'goddess' to *huacas*, he seemed to be thinking of them as linked to natural forms, anthropomorphic and tangible, something like the deities of Greco-Roman mythology and the 'demons' of medieval Europe whose lore he apparently knew in some detail" (19). However, Salomon goes on to state that the concept of *huacas* to the indigenous peoples of the Andes would have been different. He notes that "The world imagined by the Checa does not seem to have been made of two kinds of stuff

– matter and spirit – like that of Christians; *huaca*s are made of energized matter, like everything else, and they act within nature, not over and outside it as Western supernaturals do" (19)

The Huarochirí manuscript contains the term *huaca* throughout the text. Many times the *huaca*s are named; for example the *huaca* Paria Caca, who figures prominently in the story. Female and male attributes as well as emotions are also often ascribed to many of the *huaca*s and in reading the text, one must concur with the arguments made by Salomon regarding *huaca*s (18-19). *Huacas* are referred to in human terms—as sentient beings—rather than simply animated, natural features of the Inca landscape.

The Illustrated Texts of Felipe Guaman Poma de Ayala

There are many published editions of the chronicles written by Felipe Guaman Poma de Ayala, but for the purposes of this analysis, I have relied upon the excellent three-volume edition edited by John Murra and Roleno Adorno, and translated by Jorge Urioste in 1980.[47] Authors use Guaman Poma's drawings to illustrate the religious and political practices of the Inca as well as the Spanish conquest of the Americas so frequently that they have become quite familiar to readers.

[47] Roleno Adorno has also made this resource available on the website www.kb.dk/elib/mss/poma.

Though the seventeenth-century Felipe Guaman Poma de Ayala was a converted Catholic, he wrote of his Andean heritage and represents an indigenous perspective in his chronicles. However, not only was there a century separating Guaman Poma from the Spanish conquest, but also there were also obvious ideological differences between the Catholic writer and the indigenous subjects of his *coronicas*.[48]

There are several drawings in Guaman Poma's text that illustrate the practice of Inca worship of *huacas*. Landscape figures prominently in these drawings, with the inclusion of the mountains and caves, which were also often considered to be *huacas*. Several of Guaman Poma's drawings illustrate religious participants kneeling before *huacas* (Figs. 2-8).[49] An argument could be made that Guaman Poma borrowed the conventional pose of kneeling in order to show his Spanish audience the Inca equivalent of spiritual worship. Perhaps this is a conventional

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[48] Recent scholarship by Rolena Adorno illustrates that Guaman Poma was Andean and that he wrote El primer nueva coronica y buen gobierno in Peru in the early seventeenth century. Rolena Adorno, Guaman Poma and His Illustrated Chronicle from Colonial Peru: From a Century of Scholarship to a New Era of Reading (Copenhagen: Museum Tusculanum Press, 2001). In her overview of the chronicles Adorno states, "On 14 February 1615, from Santiago de Chiapo in the province of Lucanas in the south central Peruvian Andes, Felipe Guaman Poma de Ayala wrote King Philip III of Spain that he had just completed a 'chronicle or general history'," 2. She also says: "Guaman Poma was a full-blooded native. He was not a mestizo" on page 11.

[49] An argument could be made that Guaman Poma borrowed the conventional pose of kneeling in order to show his Spanish audience the Inca equivalent of spiritual worship. Perhaps this is a conventional Western religious posture that Guaman Poma adopted for his chronicles simply to create an easily understood parallel for his Spanish audience. In fact, Guaman Poma illustrates many more versions of Spanish men kneeling in Catholic ceremonies, for instance, the scene illustrated in Figure 9. It is my position, however, that the *huacas* of Machu Picchu, and the precise postures needed to view alignments between *huacas* and the landscape reaffirm the drawings that Guaman Poma provides in his *coronicas*.

Western religious posture that he adopted for his chronicles simply to create an easily understood parallel for the Spanish. In fact, Guaman Poma illustrates many more versions of Spanish men kneeling in Western ceremonies, for instance, the scene illustrated in Figure 9. It is my position, however, that the *huaca*s of Machu Picchu, and the precise postures needed to view alignments between *huaca*s and the landscape reaffirm the drawings by Guaman Poma.

Several alignments at Machu Picchu (Ch. 3) are only apparent when humans kneel down before *huaca*s. It is only then that alignments with other natural elements in the landscape are visible. Another drawing illustrates the worship of *huaca*s by an Inca standing before a group of *huacas* (Fig. 8). There are several *huacas* at Machu Picchu, for instance *Huaca* C11 (Fig. 63) that require the human to stand before the *huaca* in order to view an alignment with mountains in the landscape. I believe that the drawings of Guaman Poma de Ayala support my contention that the *huaca*s of Machu Picchu were part of a choreographic ritual involving humans and their worship of the supernatural.

Johan Reinhard's Study of "Sacred Geography"

Johan Reinhard has compiled a great deal of research pertaining to 'sacred geography' and the Inca religious practice of mountain worship. Archaeological teams, led by Reinhard, are responsible for many of the discoveries of human sacrifices found on or near mountain peaks in the Andes. The most recent account of

Reinhard's archaeological expeditions, published in 2005, is entitled The Ice Maiden.[50]

Reinhard also wrote a specific study of Machu Picchu in 1991. In Machu Picchu: The Sacred Center, Reinhard investigates the significance of nature in Inca religion, specifically mountain ranges and peaks surrounding the estate, such as Salcantay, Pumasillo and Veronica. His thesis states, "I intend to show that Machu Picchu can be better understood when analyzed within the context of the surrounding geographical features which were considered sacred. The methodology employed here to help establish this premise relies not only on the use of Inca beliefs and customs, but on a study of the natural landscape and also on current-day beliefs with roots in Inca religious ideology."[51] A map of the region surrounding Machu Picchu, which was created by Reinhard, is included in this dissertation (Map 2).

Reinhard's study of the Inca "sacred landscape" focuses on mountains, rivers, lakes, boulders, caves and springs that the Inca conceptually linked with the supernatural. Speaking of Machu Picchu specifically, Reinhard states that, "it is the rugged topography surrounding Machu Picchu which appears to have been of primary importance. In the Andes the high mountains were (and still are) considered among the most powerful of the traditional deities" (13). Machu Picchu is the perfect vantage point from which to view mountain ranges in every direction.

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[50] Johan Reinhard, The Ice Maiden: Inca Mummies, Mountain Gods, and Sacred Sites in the Andes (Washington D.C.: National Geographic Society, 2005).
[51] Johan Reinhard, 12. Subsequent quotations from this author are noted in parentheses.

This perhaps explains why so many *huacas* at Machu Picchu involve sight lines with mountain peaks surrounding the estate. Reinhard provides an excellent analysis of the significant mountain ranges seen from Machu Picchu, such as Salcantay to the south, Pumasillo to the west, and Veronica to the east of the site.

Salcantay, rises to 20,574 feet in altitude and it is located due south of Machu Picchu. According to Reinhard, "Visible from great distances, it was highly revered in Inca times and continues to be so today" (13) Reinhard further states, "It is no surprise to find that people crossing the range near Salcantay still make simple offerings in order to avoid his wrath" (15). Reinhard argues that the geographical connections between Salcantay and Machu Picchu are significant, by showing how the rivers on either side of the site originate from Salcantay. He concludes that "A direct physical link exists, therefore, between the most powerful mountain deity of a vast region and an important Inca ritual center" (25).

Pumasillo, at a height of 19,931 feet, can be seen to the west of Machu Picchu. Reinhard identifies the peak as "the highest of a series of peaks forming the Sacsarayoc Range" (26). He points to the findings of ceremonial Inca architecture as evidence of worship on and around this mountain range.[52]

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[52] He states, "Although I have not found references to these mountains in the Spanish chronicles-which in any event mention very little about the religious beliefs of the people of this region-there is little doubt that such worship took place at the time the Incas conquered the area in the mid-1400's. Archeological remains, e.g. ceremonial platforms on mountaintops in the Runkuyoc range of Vilcabamba, help substantiate this" (Reinhard, Machu Picchu, 27).

The astronomical significance of Pumasillo can be seen during the December solstice when the sun sets just behind the mountain (27). As Reinhard points out, "seen from the Intihuatana stone at Machu Picchu, the sun sets behind the highest summit of Pumasillo (246°) at the December solstice, one of the most important dates in the Inca religious calendar."[53]

Veronica can be seen to the east of Machu Picchu. According to Reinhard, the highest summit of the Veronica range, which is called *Waqaywillka* (18,865'), may have its origins in the words *huaca* and *willca*, both words referring to the concept of sacred places (29). Reinhard notes that "One of Veronica's principal summits is visible from Machu Picchu, e.g. from the Intihuatana stone, while the highest summit is visible from prominences near Machu Picchu, such as Huayna Picchu and Cerro San Miguel. At the equinoxes the sun rises behind the highest summit. This combination of a snow-capped sacred mountain and the rising of the sun at the equinoxes would have added to the reverence paid to this mountain" (30). In chapter 3 of this dissertation I document several other vantage points, connected with *huaca*s, from which the peaks of Veronica can be seen. I also demonstrate that *huaca*s on the summit of Uña Huayna Picchu align with the summit of Veronica.

According to Reinhard, the writings of Guaman Poma indicate that the Inca emperor "considered ritual specialists who served the mountain deities as being

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[53] He also mentions the "Priest's House" at the foot of the stairs leading to the *Intihuatana* and he mentions that he thinks the open doorway, facing that range to the west also is significant (Reinhard, Machu Picchu, 28).

especially privileged, and supported these men personally" (32). He further states that this type of religious worship would not have been restricted only to the important mountains surrounding Machu Picchu, such as Salcantay and the snow-capped peak of Veronica, but also to smaller peaks directly adjacent to the site, such as the summits of Huayna Picchu and Machu Picchu mountain. Reinhard also references the chronicler Betanzos, who noted the Inca culture's reverence for hills that dominated their communities, such as those above Cuzco (32).

Even to travelers today, the imposing mountain of Huayna Picchu, at 679 feet above Machu Picchu, is something to be viewed with awe. Similarly, the summit of Machu Picchu mountain, 1,640 feet higher than the estate, was undoubtedly the source of water for the fountains that were constructed throughout the site and Reinhard points out that there is a well-made stairway from Machu Picchu to the summit (35).

Reinhard concludes his discussion of the sacred landscape surrounding Machu Picchu saying, "For the Incas, with their intense concern with the orientation of water flow, with the sun's passage, and with sacred mountains, the unique combination of these elements at Machu Picchu would have made for an especially powerful sacred center" (39).

Reinhard's discussion of the sacred landscape is augmented by a specific discussion of the architecture and sculpture of Machu Picchu. He states, "It would seem obvious that, if the reasons for Machu Picchu's location and primary functions

were related to sacred geography in conjunction with celestial orientations and a hydrological cycle, we can expect that such factors would be reflected in some of the prominent architectural features at the site" (41). His discussion of architecture focuses on the structures that are commonly known as the "Principal Temple" and the "Temple of the Three Windows," which are both located around the popularly known "Sacred Plaza" (all located within Section D of this study, Map 6). He also discusses the structure known as the *Torreón* (*Huaca* B17 and B18), which lies within the estate, as well as the "Cave of the Moon" (*Huaca* HP1) on the northern slope of Huayna Picchu.

Reinhard hypothesizes that there are several stones at Machu Picchu that "have been carved or set off in such a way that it is clear they were either worshipped in themselves or used as places of worship" (47). In general, Reinhard found that stones were often conceived of as sacred and many times the Inca believed that stones were possessed by sacred spirits. Specifically, Reinhard chooses only a select group of stones to discuss, such as the *Intihuatana* (*Huaca* D10) and the "Sacred Rock" (*Huaca* F9).[54]

[54] He states, "Turning now specifically to stones at Machu Picchu, we first have to establish what evidence can be used to determine the possible function of a stone in terms of sacred geography. Since there is no direct historical evidence and the reasons that boulders were worshiped were not always the same, we have to look at each stone relative to its location within the site, and see if its shape, how it was viewed (following the approach to it constructed by the Incas), and nearby items help in establishing its function, e.g. if sacred geographical features were replicated. I am aware of only a few cases where these factors appear to come together, but these are significant ones" (Reinhard, Machu Picchu, 47).

In concluding his study of Machu Picchu, Reinhard states: "What comes out of a careful look at the geographical location of Machu Picchu is that it is not only at an ecological center between the mountain highlands and the forest lowlands, but is also located among the most sacred mountains of the region. In addition, it is virtually encircled by the sacred Urubamba River which flows generally in a southeast to northwest direction, replicating the passage of the sun" (75). Reinhard also hypothesizes that the central location of Machu Picchu may be related to the concept in many world religions of the Axis Mundi (75-76). Finally, according to Reinhard: "At Machu Picchu we find a unique combination of landscape and cosmological beliefs which together formed a powerful sacred center which united religion, economics and politics. These factors led to the construction of one of the most impressive ceremonial sites of the ancient world" (78).

Gary Urton's Study of Caves in Relationship to Inca Origin Mythology

In his extensive study of Inca mythology, Gary Urton examines the writings of Spanish chroniclers who, between the years 1542 – 1653, produced roughly forty versions of the "cycle of myths."[55] Urton believes this Inca mythology can be called "mythohistory," and he utilizes this term to suggest the chroniclers provide something between mythology and a historical account of the indigenous cultures of the Andes.

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[55] Gary Urton, The History of a Myth, 18.

If this is true, scholars must then determine if this "mythohistory" can be linked somehow to concrete, archeological evidence in the Andes.[56]

In two books in particular, The History of a Myth, published in 1990, and Inca Myths, from 1999, Urton explores the many facets of Inca mythology, and specifically, Inca origin mythology. In both, he continues to use the term "mythohistory" with the caveat that despite many written accounts from Spanish chroniclers, the reader must always read with a measure of caution. One chronicler frequently referred to by Urton is Sarmiento de Gamboa, a Spaniard who wrote Historia de los Incas in 1572. According to Urton, it is one of the most detailed versions because the chronicler interviewed over a hundred *quipucamayoqs* to tell the history of the Inca.[57] It is this "history" that scholars such as Urton now refer to as mythology or "mythohistory."

Urton's hypothesis in The History of a Myth focuses on the concrete physical location of the mythological Inca place of origin. While he argues that the source of the Inca culture may be found in the town of Pacariqtambo, he cautions that it is also possible that there was only an abstract conception of the Inca place of origin.[58] In addition, he mentions the alternative belief that the Inca place of emergence was Lake Titicaca, located in modern-day Bolivia.

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[56] For a discussion of the term "mythohistory" see Urton, The History of a Myth, page 10, FN 4, 141-142.
[57] Urton, Inca Myths, 45.
[58] Urton, The History of a Myth, 31.

There is also evidence, as Urton discovered, of hybrid legends which come from chroniclers like Guaman Poma de Ayala. He notes that "in the chronicles written by Guaman Poma de Ayala and Martín de Murúa, we find something of a hybrid legend, which combines these two traditions of origin in the person of the ancestor-king of the empire, Manqo Qhapaq, who is said to have emerged from Lake Titicaca, from where he traveled underground to Pacariqtambo and from there on to the valley of Cuzco."[59]

The significance of Urton's findings to the present study can be found in the part of the Inca origin myth that describes the ancestor's emergence from caves, or a cave at Pacariqtambo, into the world. Urton provides an excellent comparison of several versions of the origin myth and he paraphrases, saying, "At a place to the south of Cuzco called Pacariqtambo, there is a mountain called Tampu T'oqo (window house) in which there are three windows, or caves. At the beginning of time, a group of four brothers and their four sisters—the ancestors of the Inkas—emerged from the central window."[60] Based on the fact that caves and windows are mentioned throughout Inca origin mythology, I hypothesize that, at the very least, the abstract concept of the cave as a portal between the supernatural and the natural, was a part of the ideology that influenced the creation of Machu Picchu.

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[59] Urton, History of a Myth, 3.
[60] Urton, History of a Myth, 13.

Urton presents a general discussion of Inca mythology in his publication of Inca Myths. In this more generalized presentation of Inca mythology Urton reiterates his hypothesis concerning the location of the Inca place of origin at Pacariqtambo. He also explores other popular origin myths, such as the well-known Huarochirí manuscript, which describes the mountain god, Paria Caca as the place of Inca ancestral origin.[61]

In a detailed discussion of two particular cultural groups, the Guaris and Llacuazes, from the highlands of central Peru, near the town of Cajatambo, Urton describes specific beliefs concerning *huacas*: "The various *ayllus* of Guaris and Llacuazes each had special links to *huacas* in the surrounding countryside, such as mountain peaks, springs and caves. The *huacas* were thought to exert influence over the life and destiny of the particular group of people who worshipped them. The most powerful *huacas* were the high mountains, each of which had its own name, spirit (or spirits), and a particular kinship relationship to other mountains in the region."[62] Urton's observation about the relationship between humans, nature, and supernatural forces, as I show in this study, can also be applied to Machu Picchu.

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[61] Urton, Inca Myths, 45-66.
[62] Urton, Inca Myths, 71-72.

Conclusions

The chronicles of Guaman Poma de Ayala and the Huarochirí manuscript, as well as modern studies conducted by Reinhard, Salomon, and Urton, illustrate that Inca history, in all forms, has produced an undeniable repetition of similar religious ideologies that relate to nature. In particular, are the religious concepts relating to caves and mountains as places of origin and sacred, supernatural forces to be worshipped by humans. This reiteration of the same basic religious ideologies, leads me to hypothesize that the same religious concepts influenced the builders of Machu Picchu.[63]

[63] In a discussion relating specifically to solar worship by the Inca, Gary Urton comes to a similar conclusion in Inca Myths, stating, "Whatever the specific motives and interests of the various chroniclers who recount these myths, there is a sufficient and varied number of sources pointing to solar worship in the Inca empire that we cannot doubt the antiquity and pervasiveness of such beliefs," 54.

Chapter 3: The *Huacas* of Machu Picchu

Introduction

This chapter provides a detailed analysis of the *huacas* of Machu Picchu, including written descriptions as well as photographs of each *huaca* within its natural setting. Map 1 illustrates the plan of the estate, which is an adaptation of the map presented in Monuments of the Incas, by John Hemming.[64] Map 2 indicates the mountain ranges surrounding Machu Picchu.[65]

The map of the estate has been subdivided into seven sections labeled A-G, as indicated on Map 1, based on the natural divisions of the site. Some of the divisions fall within large open spaces or on stairways of the estate and others were based on the division between building sections. These divisions were created solely for convenience in discussing the *huacas*.

Within each section, the *huacas* are numbered beginning near the top left portion of the section, as seen on the maps provided (Maps 3-9), and progressing through the section from the southwest to the northeast, or left to right and top to bottom on the map. Occasionally the numbering varies slightly because certain *huacas* seem to have been part of groups and were therefore numbered accordingly.

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[64] Hemming, Monuments of the Incas, 120-121.
[65] Reinhard, Machu Picchu, p.14.

Uña Huayna Picchu and Huayna Picchu are not included on the maps of the estate, but a photograph, taken from the southern side of Machu Picchu towards the north, illustrates the two mountains rising above the site (Fig. 10, left and center of photo, respectively). The *huaca*s on Uña Huayna Picchu are both located on the summit of the small mountain. The *huaca*s of Huayna Picchu are located on all sides of the mountain, but all are situated near the peak.

Each *huaca* is discussed using the terms "Marker," "Chamber," "Repository," "Embedded," "Enclosed," and "Freestanding" (see chart 1). The three terms "Marker," "Chamber," and "Repository" were introduced by Maarten van de Guchte in his 1990 study of Inca carved stones. The same terms are utilized in this study because they are suitably applicable to the *huaca*s at Machu Picchu. Certain *huaca*s do not fall into one of van de Guchte's categories however and therefore the terms "Embedded," "Enclosed," and "Freestanding" are also used to describe the *huaca*s of the estate. The conclusion of this chapter states the way that these terms apply to the *huaca*s of Machu Picchu and the conclusions that can be drawn from categorizing the *huaca*s in such a way.

Section A

Section A is located in the southern part of Machu Picchu and it contains most of the terraces of the site. According to Lucy Salazar the estate contained only twelve

acres of land used for agriculture, most of which is found within this section.[66] Visitors who hike the Inca trail first approach the site through the "Sun Gate," or *Intipunku*, located just off the map to the left (Map 3). From the "Sun Gate," travelers hike down the trail indicated on the map to the main site. This division of the estate is the largest in area with the fewest number of *huacas*. Of the seven *huaca*s within Section A there are three that align with the natural landscape, and are considered "Markers," or "Alignments." Of the three "Marker" *huaca*s two are also "Repositories" and one is a "Chamber." Four of the *huaca*s are embedded in the architecture of the site and three are freestanding stones.

Huaca A1

Coming from the "Sun Gate," the first *huaca* in Section A is located just off the trail leading down into Machu Picchu. *Huaca* A1 is set away from the trail by two terraces on the northern side of *Machu Picchu* mountain (Fig. 11). Hiram Bingham designated this area as the "third cemetery" during his expeditions of 1911-1913.[67] This *huaca* is an excellent example of the "freestanding" category of *huaca*s (Fig. 12). It was significant to the Incas since they built terraces around its base and, as Bingham discovered, used the site as a burial ground.

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[66] Lucy Salazar in Burger and Salazar, eds., Machu Picchu, 30.
[67] Hiram Bingham, Machu Picchu: A Citadel of the Incas, 110.

Huaca A2

Huaca A2 is often referred to as either the "Funerary Rock" or "Ceremonial Rock" by scholars and also by tour guides at Machu Picchu.[68] It has several possible alignments with the surrounding landscape, and there is also clear evidence of carving on the top and sides of the stone. A freestanding stone in the middle of a large open area, it is located on the terraces above the trail leading into Machu Picchu, near a building that most guides refer to as the "Gatekeepers Hut" and just below the structure often referred to as the *Kallancha* ("dormitory" or "guard house").[69]

The most prominent alignment (Fig. 13) can be seen from a kneeling position on the western side of the stone, looking towards the pointed projection on the top of the stone and the mountain range in the east called Yanantin (Fig. 14). *Huaca* A2 also seems to be visually aligned with San Miguel in the northwest and also with the snow-capped mountain peak in the west called Pumasillo (Fig. 15 and 16). These alignments are not as prominent as the alignment with Yanantin in the east, but the fact that there are three separate alignments indicates that perhaps this *huaca* was particularly important to the inhabitants of Machu Picchu.

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[68] The following scholars refer to *Huaca* A2 as the "Funerary" or "Ceremonial" rock: Hemming, 2; Ruth Wright, 8-10. Lucy Salazar also discusses the religious function of the stone in; Burger and Salazar, eds., Machu Picchu, 47.

[69] Burger and Salazar, eds., Machu Picchu, 47.

Figure 17 illustrates the carving on *Huaca* A2, which makes it a good example of the "Repository" category of *huaca*s. A round projection with a hole was carved by the Inca on the eastern face of the stone. The northeastern face of the stone was carved in two places to create a horizontal shelf near the center and three smaller shelves that resemble steps on the northwestern end of the *huaca.* The top of the stone is primarily flat, leading some to speculate that it was used as an altar.[70] Hemming further states that this is "obviously a *huaca*" and, he states: "It may have served as a funerary altar, a place for mummifying the bodies of important dead persons or for animal sacrifices."[71]

Huaca A3

Huaca A3 is embedded in a wall located on the terraces below the "Gatekeepers Hut" at the end of the trail leading into the site from the "Sun Gate." This *huaca* is part of an alignment with San Miguel, the mountain to the northwest. The stone becomes part of a visual alignment with San Miguel when a person kneels approximately six feet southeast of the stone (Fig. 18).

This *huaca* also may be categorized as a "Chamber" because it forms a partial overhang towards the bottom of the stone (Fig. 19). Modern workers have placed a piece of wood between the wall of the terrace and the stone in order to support a

[70] Arévalo Merejildo-Mallku, Machu Picchu Forever, 74. The photo on page 74 illustrates a person lying on the stone in the manner of a human sacrifice.
[71] Hemming, Monuments of the Incas, 130.

metal roof covered in straw. It appears the chamber is now used for holding supplies; a bench of wood was added to provide a seat for workers. The foundation of a stone wall on the floor of the opening of the space is evidence that suggests that this space was closed at one time.

Huaca A4

Huaca A4 is also located on the terraces on the eastern face of Machu Picchu mountain (Fig. 20). It is a very large stone that was incorporated into a stairway leading down into Machu Picchu. It has been categorized as an "Embedded" *huaca* because of the structural connection with the stairway.

Huaca A5

Huaca A5 is located beside the stairway leading down from the trail coming in from the "Sun Gate." It is on the opposite side of the stairway from *Huaca* A4 and was also built into stairs. A standing position on the stairs yields a visual alignment with part of the mountain range in the east called San Gabriel (Fig. 21). It also has a horizontal shelf that may have been used as a repository for offerings and/or a seat. If one stands or sits on the stone a full view of Machu Picchu can be seen to the northeast.

Huaca A6

Huaca A6 is a small freestanding stone outcrop located near the modern-day entrance to the site. It is on one of the terraces on the northern side of the agricultural sector of Machu Picchu (Fig. 22).

Huaca A7

This is a large stone boulder that seems to have been left in place, perhaps out of necessity, and structures were simply built around it. Figure 23 illustrates the *huaca* and the structure built around it. Modern visitors to the estate have to maneuver themselves around this stone in order to enter the site from the main entrance to Machu Picchu. Similarly, the Inca would have been forced to maneuver around this stone in order to inhabit this architectural space. The stone does not fill the room in which it stands, therefore the remainder of the space may have been used by the Inca for storage or living quarters.

Section B

Section B is located in the southwestern portion of the site and is higher in elevation than other parts of the estate, so it could be referred to as the upper part of Machu Picchu. This section has a number of very large natural stone outcroppings left in situ by the Inca and incorporated into the architecture of the estate (Map 4).

The northwestern part of Section B is commonly known as "The Quarry" because of the large number of unmoved stones.[72] As Kenneth and Ruth Wright indicate in their book about Machu Picchu, the site lies on a fault line, thus creating a readily available source of granite.[73] The stones in this area are not a part of the study of *huacas* in this dissertation because it is clear that they were unused.

This section of the estate also contains a group of buildings that many scholars refer to as the "King's Group" or the "Royal Residential Complex" of Machu Picchu. Bingham was the first to name this cluster of buildings the "King's Group" based on the exquisite stonework seen here and also because of its proximity to running water. It is also apparent from reading Bingham that he gave it this name for "lack of a better term."[74] Lucy Salazar, among many other scholars, concurs with Bingham's hypothesis that the Inca elite would reside in the first place that fresh water comes into the estate via the fountains.[75] She observes that the buildings are "set apart from the others" and they show a "superior quality of their fitted stonework."[76]

Section B is rich with *huacas* that fit into the three basic categories of *huacas*. There are ten *huacas* that serve as "Repositories," three that are "Chambers," and four that are "Markers."

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[72] Bingham, Machu Picchu: A Citadel of the Incas, 16.
[73] Ruth Wright, 13.
[74] Bingham, Machu Picchu, 97.
[75] Ruth Wright, 34 and Burger and Salazar, eds., 31.
[76] Burger and Salazar, eds., 30.

Huaca B1

This *huaca* is located in the western part of Section B next to one of the main gates to Machu Picchu. It is a very large granite boulder left in its place of origin, and subsequently incorporated into a wall. Bingham noted its existence in his early expeditions to the site and its use within several walls adjacent to the gate.[77] It is possible that the Inca builders intended for this stone to mimic part of Machu Picchu mountain in the west. The highest peak of the mountain range may have been intentionally viewed in conjunction with the *huaca* (Fig. 24). The view of the *huaca* and the mountain is best seen from a seated position in the room located north of the boulder.

Huaca B2

Huaca B2 is also embedded in a wall on the western side of Machu Picchu. The boulder slopes down toward the ground from an approximate height of thirty feet (Fig. 25).

Huaca B3

At first glance *Huaca* B3 seems like an insignificant outcrop of granite in the middle of a walkway at the top of Section B but a short row of cut stones surround the southern and eastern sides of the *huaca*. This suggests the stone was indeed

[77] Bingham, Machu Picchu, 44.

important to the Inca. Figure 26 illustrates the southern face of the *huaca* and Figure 27 is a photograph of the opposite side of the stone. The stone is only approximately ten inches high, therefore visual alignments with the landscape are impossible.

Huacas B4 and B5

Huacas B4 and B5 are located on the pathway leading south from *Huaca* B3. *Huaca* B4 is part of a visual alignment with Uña Huayna Picchu, to the north and possibly with San Miguel in the northwest. Figures 28 and 29 illustrate the visual connection between the human, the *huaca*, and Uña Huayna Picchu when a person is seated approximately three feet south of the stone.

Two grooves were carved onto the top of *Huaca* B5, most likely to create a seat from which to view another alignment with *Huaca* B4 and San Miguel. The alignment can be viewed from the seat of *Huaca* B5 located approximately two feet southeast of *Huaca* B4 (Figs. 30 and 31). Both stones are partially embedded in the walls flanking the footpath as well.

Huaca B6 a and b

Moving down a flight of stairs to the next line of structures in Section B one comes to *Huaca* B6, an overhang with a carved stone located beneath it. This *huaca* is in fact two separate stones that are located in exactly the same place, one just above

the other, therefore they are designated as *Huaca* B6a and B6b. The overhang is designated as *Huaca* B6a and the carved stone below it is *Huaca* B6b.

The overhanging stone was built into the wall of a structure that can be entered from the top level of Section B. Figure 32 illustrates the two stones of *Huaca* B6 and the wall that was built on top of and around the *huacas*. The stone beneath the overhang was carved out to create a repository. At first, it looks as if it was carved by the Inca to create a seat but the distance between the horizontal shelf and the ceiling created by the overhang—approximately one and a half feet—is not enough space for any human. Therefore the repository carved on this stone was most likely utilized as a place to deposit offerings.

Huaca B7

Huaca B7 is a freestanding stone located in the same walkway where *Huaca* B6 is situated. This *huaca* is oriented towards the east and is in visual alignment with the mountain peak Yanantin beyond the stone. Figure 33 illustrates the alignment and Figure 34 shows the seated position from which the alignment can be seen.

Huaca B8

This *huaca* is located within a closed structure on the southern part of Section B. At approximately two feet and six inches in height, it is quite small in comparison to the room in which it stands (Fig. 35). As the photograph of *Huaca* B8 illustrates

the stone does not fill the room, therefore humans might have easily occupied this space as well.

Huaca B9

Huaca B9 is an overhang that is similar in form to *Huaca* B6. It is a large overhanging stone that has been incorporated into a wall by Inca stonemasons (Figs. 36 and 37). The opening between the walls surrounding the boulder leads into a cavity, currently empty. A photograph of the interior space illustrates a man-made wall opposite the opening beneath the overhang (Fig. 38). This is most certainly one of the spaces generally described by Hiram Bingham as a burial place for the Inca deceased.

Huaca B10

This stone is very large and it has been surrounded completely by a wall on the northern side of the structures in Section B (Fig. 39). This is another example of a stone that was not removed from its place of origin and, subsequently, it became an integral part of the exterior wall of a structure.

Huaca B11

This stone is located partially inside an open structure and partially in the walkway that passes the structure. The large stone obstructs over fifty percent of the

footpath in which it sits (Figs. 40 and 41). A channel carved on the top of the stone was perhaps utilized in Inca ceremony. When I poured water in the center of the channel the liquid flowed towards both ends of the stone simultaneously. It seemed at first as if this stone was used in constructing the main water channels of the estate, which lead across the site from the south towards the sixteen fountains at the center of Machu Picchu. However, this stone is situated well within the structures of Section B which leads me to believe it was not merely left while in transit to another part of the site and therefore the carving appears to be intended for ritual purposes taking place within the particular structures where it is located.

Huaca B12

This stone, located on the corner of a structure near the center of Section B (Fig. 42), is another example of a large boulder used by the Inca for support of part of a structure. A short wall was built under the eastern side of the boulder to stabilize it where it does not touch the ground while a structure was built on top of the stone. Interestingly, the *huaca* completely breaks the vertical line of the building in which it was integrated. The structure takes on a unique form because of the enormity and non-rectangular shape of the *huaca*.

Huaca B13

This is a large stone that appears to have been left in its place of origin and its top has been carved to create a horizontal shelf (Fig. 43). It is approximately two feet high and nine feet in length, occupying half of the room in which it is embedded. There are three niches in the western wall of the structure, directly above the *huaca*. This stone may have been used as some kind of furniture, or perhaps as an altar for religious purposes or both. Figure 43 illustrates that low depressions on the top of the stone hold liquids -- note the standing rainwater in the circular depression on the right side of the stone.

Huaca B14

This *huaca* was set in a wall approximately six feet above the ground (Fig. 44). It is in the lower part of Section B, which some scholars call the "King's Group" or "Royal Residence," in an open-faced structure. Ruth Wright discusses this stone in her book, suggesting that the ring carved from the stone may have been a "receptacle for a torch or staff."[78] I concur with this explanation and further hypothesize that offerings may have been left here as well.

[78] Ruth Wright, 36.

Huacas B15 and B16

Figure 45 is a photograph of *Huacas* B15 (middle ground) and B16 (foreground), which were carved from the same large stone outcropping. The boulder is designated as two separate *huacas* because the carving on each *huaca* should be discussed independently. The *huacas* are completely surrounded by Inca architecture, but like many others at the site, they do not fill the entire room, thus leaving space within the structure for human occupation.

Huaca B15 has two circular depressions cut from the same piece of granite rising from the ground. Other stones similar to these are located elsewhere at the site and were classified as mortars by Hiram Bingham (Fig. 122). The circles carved in *Huaca* B15, are approximately nine inches and six inches in diameter.

Huaca B16 is a curiously carved stone with several angles and one circular depression as well. Many different planes have been carved into this stone, creating several places that could hold offerings or serve as altars for sacrifices.

Huaca B17

This stone is popularly known as the "Sun Stone" because of certain solar events that occur in conjunction with it. Figure 46 illustrates the top of the stone surrounded by a structure often referred to as the *Torreón* or the "Tower" because one

side of the structure is round.[79] This *huaca* and the cave beneath, both carved from the same large boulder, are very popular points of interest at Machu Picchu. The round structure represents a unique style of Inca architecture and it resembles the rounded section of the "Temple of the Sun" or *Coricancha*, in the Inca capital of Cuzco. This has led many people to conclude that the uniquely round wall signifies sacred architecture. Bingham believed that the rounded wall was accidental, built in such a way to conform to the shape of the stone that it encloses.[80]

Evidence of careful astronomical orientation can be seen in the carving on the top of *Huaca* B17. Just after sunrise on June 21st, the winter solstice, the sun projects from the east through the window of the structure and hits the stone precisely on the spot where the *huaca* was carved by human hands. The astronomical significance of the stone and the structure surrounding it has been thoroughly discussed by scholars including Reinhard and Urton.[81]

Many scholars have speculated about other uses and meanings of the carved stone. Bingham stated that the design on the top of the stone was the result of a significant fire that burnt the stone and that the stone served as the "family altar."[82] Lucy Salazar believes that the carved stone "resembles a feline, probably a puma."[83]

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[79] Hemming, 133-139; Reinhard, Machu Picchu, 55-57; Salazar and Burger, eds., 36; Bingham called it a "Semicircular Temple" in Machu Picchu, 94.
[80] Bingham, Machu Picchu, 234.
[81] Reinhard, Machu Picchu, 55-57; Urton, At the Crossroads of the Earth and the Sky: An Andean Cosmology, (Austin: University of Texas Press, 1981), 125.
[82] Bingham, Machu Picchu, 93.
[83] Burger and Salazar, eds., 36.

I hypothesize that the stone was certainly utilized by the Inca as a sacred repository and that offerings were most likely made during the winter solstice, when the astronomical event described above occurs.

It is important to note the significance of the mass of the stone within the structure. Unlike any other *huaca* at the site this stone does not simply stand within the structure, it fills the room entirely. While human occupation is possible one is constantly aware of the imposing nature of the stone.

Huaca B18

The same stone that was carved to create *Huaca* B17 also forms a cave with several stone carvings, all of which will be designated as *Huaca* B18. Figure 47 illustrates the entire cave and Figures 48 and 49 are details of the carved stones beneath the cave. Hiram Bingham referred to this cave as "The Royal Mausoleum" because he believed that the large niche at the back of the cave must have held a royal mummy bundle at some time in Inca history.[84] In the concluding remarks of his book, Machu Picchu: A Citadel of the Incas, Bingham further stated that this was the final resting place of Pachacutec himself.[85]

There are several niches in this cave and partial walls built from cut stone as well as two carved stones. One of the latter is flat with a vertical projection on the

[84] Bingham, Machu Picchu, 89-90. Based on the theory that Machu Picchu was Tampa-toco, the legendary place of origin for the Inca.
[85] Bingham, Machu Picchu, 234.

top (Fig. 49). The form of this stone is very significant in relation to other *huacas* at Machu Picchu. The so-called *Intihuatana*, *Huaca* D10, is similar in form to this stone yet they clearly do not have the same purpose (Fig. 89). The astronomical functions associated with *Huaca* D10 cannot apply to this stone because it is sheltered within a cave, preventing it from any kind of solar association. This could seriously alter the assumptions made concerning the stone that has been popularly know as the *Intihuatana* for so long.

The other stone was carved to create small horizontal shelves that may have been used to hold offerings (Figs. 47 and 48). Scholars, such as Terence Grieder, have also noted the significance of the stepped motif in Andean art and the association between the motif and mountain worship.[86] Of note is the view of Yanantin in the east that can be seen from within the cave (not pictured). Such a dramatic view would certainly explain carvings within the cave that can be associated with mountain worship.

Huaca B19

The last *huaca* in Section B of is located just above one of the main fountains of Machu Picchu. It was carved to create a "Marker" and a "Repository" (Figs. 50 and 51). The top of the stone visually aligns with Putucusi in the east when viewed

[86] Terence Grieder, Origins of Pre-Columbian Art (Austin: University of Texas Press, 1982), 133; Van de Guchte, 194; Reinhard, Machu Picchu, 56.

from the stairs, standing west of the stone just outside of the structure. The stone is also carved in several places to create horizontal shelves. The Inca may have carved this stone in order to create a seat, or perhaps a throne. When seated on this stone looking towards the south, the viewer is able to see the "Sun Gate" perfectly.

Section C

This section of Machu Picchu is on the eastern side of the ridge and contains thirteen *huacas* (Map 5). There are four *huaca*s that are "Repositories;" three that are "Chambers;" and one that is a "Marker." Although only one *huaca* visually aligns with the surrounding landscape, there are multiple alignments associated with that *huaca* that lead the viewer's eye primarily to the east. Much of the southeastern portion of this section is now in ruins, but it is apparent that this was once a section comprised mostly of smaller structures.

The popularly known "Condor Group" is located within Section C and is designated as *Huaca*s C4-C7 in this dissertation. When it is considered as a whole space, the "Condor Group" presents many *huaca*s that indicate a very sacred center within the estate. The group consists of a cave and several stones that include horizontal shelves, or repositories. The only thing lacking from this group is an alignment with the surrounding mountains. The "Condor Group" is an enclosed plaza, however, and the low position of the stones within the site prohibits any visual sight lines with the landscape.

Huacas C1, C2, and C3

Figure 52 illustrates *Huacas* C1, C2, and C3 and their placement in the eastern sector of Machu Picchu. *Huaca* C1 is an overhang with a shallow opening beneath part of the stone. The space beneath the stone is presently empty but it may have held a mummy at one time. A wall was built on either side of the boulder (Fig. 53) and it sits on a terrace above several manmade structures. Similarly, *Huacas* C2 and C3 are large boulders that were incorporated into the surrounding walls (Figs. 54 and 55) in the same area of Section C.

Huacas C4, C5, C6, and C7

Figure 56 illustrates the entire *huaca* grouping commonly known as the "Condor Group" (*Huaca*s C4 – C7) as well as the cave, which is located south of the configuration.[87] Bingham first described the group of stones and the structures around them as the "Unusual Niches Group" because of the incongruously large niches in the structure above the *huaca*s.[88] Behind the "Condor Group" is a small opening through which one may enter a cave with niches and a carved stone shelf. The opening to the cave is just to the left of the stones pictured in Figure 56. The wall leading back to the cave also has several small niches that may have been used as receptacles for offerings to the *huaca*s.

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[87] Ruth Wright, 86-87; and Reinhard, Machu Picchu, 61, refer to this as the "Condor Group."
[88] Bingham, Machu Picchu 80.

Figure 57 illustrates the interior of the cave, which is located to the south of the "Condor Group." Within the cave there is a stone with a horizontal shelf. The stone is situated adjacent to a large niche, which would have been of adequate size to hold a flexed mummy bundle. The shelf beside the niche could have been used as a seat for humans or a space for holding goods (Fig. 58). The exact function of the niche and the shelf are unknown, but it is highly likely that this was a space used by the Inca for mortuary rituals. It is possible that a mummy bundle was placed within the niche and the adjacent *huaca* was used by the living in order to commune with the dead.

The stones signified as *huacas* C5, C6 and C7 comprise the popularly known "Condor Stone" of Machu Picchu. This is a common stop on the tours of the estate and the guides often describe the importance of the condor in Inca mythology when they point out the body of the condor on the ground (Fig. 59) with its head pointing eastward and the two wings of the bird thrusting upwards on either side.[89] In the photograph (Fig. 56) the body of the condor is on the ground with its head pointing towards the viewer and the wings of the bird thrust upwards on either side.

The large *huacas* that are seen by many as being the wings of the condor were used by the Inca stonemasons as foundation stones for the structure above the stone configuration (Fig. 56). This structure contains very large niches which Bingham

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[89] In Machu Picchu, Johan Reinhard says that "Condors, which soar around the highest slopes of the mountains, are widely though in the Andes to be the representations, or manifestations, of the mountain gods," 22.

hypothesized were built to hold mummy bundles.[90] Others have theorized that the niches may have been used to hold prisoners.

Figure 59 illustrates the horizontal stone that is identified as the condor's body, head and crest of feathers encircling the neck of the bird. Hemming argues that this stone may have been used as an altar for ritual sacrifices and that the grooves carved into the stone carried sacrificial fluids.[91] Casting aside all notions of the "Condor Stone" it is highly possible that this *huaca* was simply seen as a repository during sacred ceremonies.

Huaca C8

This stone is located within the same courtyard as the "Condor Stone," situated approximately five feet east of the head of the condor. There is no evidence of an alignment with the surrounding landscape but the *huaca* is carved in several places on the top (Fig. 60). The intent of the Inca stonemasons in carving several horizontal shelves on the boulder may have been to create altars for offerings left by the Inca for the group of *huaca*s discussed above (*Huaca*s C4 – C7).

[90] Bingham, Machu Picchu, 81.
[91] Hemming, 156.

Huaca C9

Huaca C9 is a large stone with naturally occurring fractures that create very small cavities in the stone. The large boulder supports the structure built above as well as the buildings on either side. The top portion of the boulder is very extensive and it occupies most of the structure above (Fig. 61).[92]

Huaca C10

This is a large stone outcropping that slopes out into the center of an open structure on the eastern side of Section C (Fig. 62). The granite outcrop is so low lying that it could not have been a part of an alignment with the surrounding landscape even before it was enclosed by a structure. This stone fills approximately thirty percent of the room, therefore human occupation of the same space is entirely possible.

Huaca C11

This *huaca* is significant because it is a part of several visual alignments with the surrounding landscape. Figure 63 is an overall view of the *huaca* on the eastern side of Machu Picchu. Figure 64 illustrates two people sliding down the slope of the stone, which has become a popular past time for tourists at the site and the impetus

[92] It was impossible to find an elevated vantage point to photograph the upper room illustrating the *huaca* within the structure.

for name "The Sliding Rock." The west face of the stone slopes down to an open courtyard and the east side drops off dramatically to the terraces approximately one hundred feet below (Fig. 65). The photograph also illustrates the way the *huaca* was incorporated into the terrace walls below.

There are four ways in which the stone's pinnacle, illustrated in Figure 66, aligns with the mountains in the east, depending upon different standing and kneeling positions assumed by the viewer. The primarily visual alignments are oriented towards the eastern mountain ranges, including Yanantin, and San Gabriel. There is also a possible visual sight line with Huayna Picchu in the North.

The first alignment is evident from a standing position at the bottom left corner of the slope of the stone (Fig. 67). Looking towards the southeast it is clear that the mountain range called San Gabriel has been mimicked by the sculptors of the stone (Fig. 68 and 69).

Standing two feet behind the first position and looking instead towards the northeast, the peak of Yanantin is illuminated (Fig. 70). A third alignment, with the peak of Huayna Picchu in the north, is visible from a standing position on the right corner of the slope of the stone (Fig. 71). Finally, from a rather awkward kneeling pose on the slope of the stone, the eastern mountain of San Gabriel is once again visible (Figs. 72 and 73).

Looking at the entire stone it is clear that every part of the contoured section at the pinnacle of the stone aligns with the mountain range to the east of Machu

Picchu and also to the peak of Huayna Picchu which is due north of the site. It is evident that this sloping stone was carved at the top to create a repository, which could be interpreted as either a seat or perhaps an altar (Fig. 66). When seated upon the top of the stone, the viewer has a full view of the upper portion of Machu Picchu in the west including the *Torreón* directly across the site. The pinnacle of the stone was then further manipulated to mimic the mountains. One may also read this sculpture as a miniature representation of the mountains; in other words, a man-made model of the surrounding landscape.

Huacas C12 and C13

A small structure located south of *Huaca* C11 contains two stones with unique carvings. Looking closely at *Huaca* C12, one can see that the top of the stone was carved in a "scalloped" pattern that creates ridges sloping down the southern side of the *huaca* (Figs. 74 and 75).

Huaca C13 is smaller than *Huaca* C12 and the scalloped carving is larger and less defined than C12 (Figs. 76 and 77). Both *huacas* are embedded in the walls of a structure.

Section D

Most scholars consider this section of Machu Picchu to be the sacred center of the site. It contains the popularly known "Sacred Plaza" and the famous stone that

was dubbed the *Intihuatana* by Hiram Bingham during his explorations of Machu Picchu.[93] There are fourteen *huacas* in this section: five "Repositories;" two "Chambers;" and four "Markers." The existence of a large percentage of visual alignments within this section is not surprising, considering that this is the highest section in elevation at the site, excluding the peaks of Uña Huayna Picchu and Huayna Picchu (Map 6).

The so-called *Intihuatana* is located at the top of a hill and is therefore the highest *huaca* and the best view of the surrounding landscape can be seen from this vantage point. Bingham discovered that there were many large stones leading up the hill, under which he was sure burials would be found. However, when his team did not discover skeletons beneath these stones, Bingham concluded that the small stone walls built up around the boulders were meant to finish the rough stone and not to secure the body of an Inca.[94]

Huacas D1 and D2

Two stones with similar dimensions and square form are located in the western part of the "Sacred Plaza." Figure 78 illustrates the plaza and the two *huacas* (*Huacas* D1 and D2) on the left and center of the photograph. Figure 79 is a photograph taken from the center of the "Sacred Plaza" looking west past *huaca* D1

[93] Bingham states that they named this section of the city the "Sacred Plaza" for "want of a better name" in Machu Picchu, 56.
[94] Bingham, Machu Picchu, 56.

(foreground) and D2 (background) towards the western landscape. As Figure 79 illustrates, there are no alignments evident looking westward and the same is true looking towards the eastern landscape. It is probable that these stones were being transported to one of the structures near the "Sacred Plaza," given that they are the same square shape as the typical building stones of the site. They are both contained within a plaza with several other important *huaca*s, however.

Huaca D3

This is another *huaca* found in the "Sacred Plaza" and one will often find local guides discussing this stone on tours of the site because some people hypothesize that it has a connection to the Southern Cross.[95] The *huaca* was carved by the Inca on the southern face of the stone (Fig. 80). The horizontal shelf may have been used as a repository for offerings or, perhaps as a seat, from which the southern mountain range of Machu Picchu can be viewed.

Huaca D4

This stone is located in the building dubbed the "Principal Temple" by Bingham during his explorations of Machu Picchu (Fig. 78). In his discussion of the structure he describes the large stone against the northern wall as an altar.[96] The

[95] Ruth Wright makes the same observation in her book on page 48.
[96] Bingham, Machu Picchu, 59.

photograph in Figure 78 illustrates the *huaca* as it sits embedded within the temple wall on the north side of the "Sacred Plaza." It is a long horizontal shelf, approximately four and a half feet high and could well have been used as an altar. The boulder does not fill much of the room, therefore human occupation is possible.

Huaca D5

This stone is located on the southern side of the "Sacred Plaza" (Figs. 81 and 82). Ruth Wright hypothesizes that this *huaca* was "in transit" because there are smaller stones beneath the monolith that may have been used to move the boulder from one location to another.[97] Regardless of the intended resting place of the *huaca*, this stone may be categorized as a repository.

Huaca D6

This stone is a popular part of the tour of Machu Picchu because it was carved to create half of the "Andean Cross," which is a prominent design in Inca art (Fig. 83).[98] It is located in front of the structure that has been named the "Temple of the Three Windows." According to Hemming, there are stones quite similar to this at several Inca sites including Ollantaytambo, and Pisac (Fig. 84)[99]. The stone forms the top half of the stepped cross and during the morning hours of the day shadows

[97] Ruth Wright, 48.
[98] For more on the Andean Cross in Inca designs see Ruth Wright, 44-45.
[99] Hemming, Monuments of the Incas, 147.

cast by the stone create the bottom half of the cross. Figure 83 is a photograph of the stone taken soon after sunrise in June. The sun rises above the eastern mountain range and casts a shadow on the west side of the *huaca*. The upright support stone beside *huaca* and the gables on northern and southern walls of the structure indicate that this building was roofed at one point. Therefore, it is unclear if the shadow that is now cast by the stone was also evident to the Inca.

The stone does not align with any of the surrounding landscape but it may be an abstract sculptural reference to mountains in general. Hemming notes the significant view of the snow-capped mountains in the west from the interior of the structure.[100] Although they are quite shallow, the horizontal planes may have been used to hold offerings.

Huaca D7

Huaca D7 is northwest of the "Sacred Plaza" at the base of the hill where the *Intihuatana* is located (Figs. 85 and 86). The height of the stone in relation to the average human standing on the ground level prevents an alignment with the surrounding landscape. Instead, it seems as though the Inca found the stone to be both sacred and functional, as it is embedded in the terrace walls on all sides.

[100] Hemming, 146.

Huaca D8

This is a large *huaca* with a small cavity on the southern side of the stone. It is located near the top of the hill where the *Intihuatana* stone is located (Figs. 86 and 87). The Inca also incorporated this stone into the terrace walls.

Huaca D9

This *huaca* is also located on the hill leading up towards the *Intihuatana*, on the western terraces of the estate (Fig. 88). It is approximately fifteen feet high and the terraces were cut out of the hill around the giant boulder. A stonewall was also constructed around the top of the stone.

Huaca D10

This stone was named the *Intihuatana* or "Hitching Post of the Sun" in 1911 when Hiram Bingham first explored Machu Picchu (Fig. 89). There is no evidence, however, that this concept was Inca in origin. The vertical projection at the top of the stone led Bingham to assume, as does everyone now, that the stone was part of an astrological ceremony in which Inca priests reined in the sun on the December Solstice, the shortest day of the year.[101] The stone is also often called a 'gnomon,' which also implies a solar function, as a sundial.[102]

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[101] Bingham, Machu Picchu, 52.
[102] Hemming uses the term 'gnomon' in Monuments of the Incas, 147.

It has been carved in many places to create repositories, but the only alignment that one could make with this stone would be with Huayna Picchu to the north (Fig. 90). The angular form of the projection does not mimic Huayna Picchu as other *huacas* at the site and therefore this alignment may not have been intended by the Inca. This *huaca* is demarcated by a low-lying wall, which signifies the importance of the stone to the builders of Machu Picchu. As the only major sculpture in a plaza that sits upon a hill, it is the highest *huaca* within the estate and the panoramic view of the landscape from this point is unmatched anywhere else at the site.

Van de Guchte states that the common practice of naming certain stones *Intihuatana* (hitching post of the sun), first done at Machu Picchu by Bingham, is totally without historical basis according to many scholars. Van de Guchte, citing both Walter Krickenberg and John Rowe, says that the *Intihuatana* stones (gnomons) should be looked at as Sun Altars and not as Sun Dials.[103] However, for ease of identification in the present study, the so-called *Intihuatana* at Machu Picchu (*Huaca* D10) will remain so-named, with the above arguments noted.

Huaca D11

This *huaca* was carved to a point that indicates a southerly orientation (Figs. 91 - 93). The stone is located on the southern corner of the small plaza in which

[103] Van de Guchte, 21.

Huaca D10 also stands. There is a similar stone, *Huaca* HP9 (Fig. 217) that also points towards the south. Ruth Wright hypothesizes that both stones point towards the Inca capital of Cuzco in the South.[104]

Huaca D12

Huaca D12 is also a part of tours of Machu Picchu because it is an excellent example of the way in which stones at the site visually align with the surrounding landscape. I have also witnessed guides discussing the concept that this *huaca* is a miniature map of the entire mountain range to the east of Machu Picchu. Figure 94 illustrates the *huaca* and the way in which it perfectly aligns with the peak of Yanantin as well as the smaller peak of Putucusi. To view this alignment one must stand within a small structure west of the stone. The structure, illustrated in Figure 96, contains niches that may have been used when worshipping this *huaca* and the mountains beyond the stone.

A photograph of the eastern face of the boulder (Fig. 96), illustrates that *Huaca* D12 is an extremely large boulder in the hill leading up to the *Intihuatana*. Figure 95 illustrates the southern face of the *huaca* and a second alignment with Uña Huayna Picchu, north of the *huaca*. It is on the same hilltop as the *Huaca* D10, and therefore the same panoramic view of the landscape surrounding Machu Picchu is evident.

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[104] Ruth Wright, 36. She calls it the "arrow stone."

Huaca D13

This stone is also located on the east face of the hill above the Sacred Plaza. Although it is very difficult to capture in one photograph, there appears to be a visual alignment between the stone and the snow covered peak of Veronica in the southeast (Figs. 97 and 98). Figures 99 and 100 illustrate the kneeling position needed to view the alignment with Veronica in the southeast.

Huaca D14

Huaca D14 is an overhang at the corner of a terrace in the open area often referred to as the "Main Square" of the estate (Figs. 101 and 102). In the view of Section D (fig. 101) *Huaca* D14 is located near the center of the photograph. The cavity between the *huaca* and the ground may have been utilized by the Inca as a repository for sacred offerings.

Section E

Section E is located on the eastern side of Machu Picchu and it contains twenty-three *huaca*s (Map 7). Nine stones were carved to create repositories and four *huaca*s form caves. Five *huaca*s can be viewed in alignment with the surrounding landscape, one of which aligns with three different parts of the landscape around the site.

The caves discussed in this dissertation are the examples found only within the limits of the estate set by this author. Bingham and his team discovered many burial caves further down on the eastern terraces of the site that are not included in this study.[105] Alfredo Valencia Zegarra, Lucy Salazar, and Richard Burger have written about the most recent burial caves found on the eastern slopes of the ridge in their new book, Machu Picchu: Unveiling the Mysteries of the Inca.[106]

Huaca E1

As indicated on the map of the estate, *Huaca* E1 is a very large boulder near the center of Machu Picchu (Maps 1 and 7). This *huaca* is embedded in the wall of the terrace on which it stands. The top of the stone aligns with Machu Picchu mountain in the southwest (Figs. 103 and 104). Figure 105 illustrates that a person seated approximately seven feet northeast of the stone can view this alignment with Machu Picchu mountain. The view of the southeastern face of the stone illustrates how the Inca built the *huaca* into the wall (Fig. 106).

Huaca E2

Huaca E2 is an example of a large stone at Machu Picchu that was evidently left in its place of origin by the Inca. Though the stone was not moved, the Inca

[105] For more details about the burial caves found by Bingham see, Bingham, Machu Picchu, 99-116.
[106] Burger and Salazar, eds., 70-82.

stonemasons did not ignore the boulder, but instead built around it on all sides (Fig. 107). On the left side of the stone (viewer's left in photograph) a wall was built, and one of the main staircases of Machu Picchu lies on the opposite side of the wall. A much smaller stairway was built directly to the east (right) of the stone. Bingham noted that the stairway once led to a small private garden terrace above the stone.[107] Presently, a view of the garden no longer exists, but the eastern mountains can be seen, albeit without any visual alignments to specific peaks (Fig. 120 illustrates this view). Another wall was joined to the boulder at the top as well.

Huaca E3

Huaca E3 is located on the opposite side of the small staircase from *Huaca* E2 (Fig. 108). A section of the stone may be seen in Figure 107 as well (viewer's right in photograph). This is another stone that was probably left in its place of origin by the Inca due to its size and weight. Stones like this appear frequently in this section of Machu Picchu and they may have been utilized by the Inca as natural divisions of the architectural space.

Huaca E4

Huaca E4 is comprised of two upright slabs of granite that completely block an otherwise-open passageway between several structures (Fig. 109). The stones

[107] Bingham, Machu Picchu, 47, illustrated figure 28a.

abut one another and possibly were part of one outcropping before the Inca carved them. The large horizontal planes on the top of the stones indicate that this *huaca* may have been utilized by the Inca as a repository for holding objects.

Huaca E5

This stone was carved by the Inca to create two large horizontal shelves leading up to niches on the northern wall of the structure surrounding it (Fig. 110). Small steps have been carved on the ground level (photo, right) and between the two horizontal shelves (photo, left) to facilitate access to the niches. The large granite outcrop may have been used here as furniture or as an altar for offerings. It is embedded in the walls of the structure and it fills ninety percent of the room, making it a dominant structural element.

Huaca E6

This *huaca* has been incorporated into adjacent buildings and stairways in the same way as *Huaca*s E1, E2, and E3. There is a narrow stairway cut out of the western side of the stone leading to an upper level of ground, above the structures of this part of Section E (Fig. 111). The builders of Machu Picchu often cut stairways from the natural rock when it was available. From the top of the stairs, a view of *Huaca* E1 can be seen to the west; the mountains ranges—without a specific alignment—may be seen to the east (Fig. 120 illustrates this view).

Huaca E7

Huaca E7 is a part of several visual alignments with the surrounding landscape including San Gabriel to the east; Huayna Picchu to the north; and Machu Picchu Mountain to the southwest. The Inca set this boulder apart from other structures, enclosing it within partial walls on all sides (Fig. 112 - 116). Niches were built into the walls surrounding the stone, which suggests that offerings were made to this *huaca* during religious ceremonies.

The eastern side of the stone is open to a courtyard, from which an excellent visual alignment with San Gabriel can be viewed (Fig. 113). The walls surrounding the *huaca* are not complete, seemingly left open by the Inca in order to facilitate the view of the landscape illustrated in Figure 114. The alignment with San Gabriel can be viewed from a kneeling position in the open courtyard west of the *huaca* (Fig. 115). The *huaca* also has several repositories cut into the eastern face of the stone only, again suggesting a ritual involving the visual alignment with the east.

A subsequent alignment with Huayna Picchu in the north can be seen from a standing position directly south of the stone (Fig. 116). A third alignment with Machu Picchu mountain in the southwest can be viewed from a standing position northeast of the *huaca* (Fig. 117).

Huaca E8

Abutting the stairway leading up to *Huaca* E7 is another large stone, *Huaca* E8 (Fig. 118). As the photograph illustrates, several walls were built beside, below and above it.

Huaca E9

Sitting low to the ground, *Huaca* E9 is embedded between structures on the northern portion of Section E (Fig. 119). The base of the stone was carved by the Inca to create a repository and perhaps it was used as a bench or an altar. As the photograph in Figure 119 illustrates, in the late afternoon the entire horizontal shelf is covered by a shadow cast by an adjacent structure. Sitting on the stone does not provide any significant view of the surrounding landscape.

Huaca E10

Huaca E10 is a large boulder that was incorporated into a wall located near the center of Section E (Map 7). Although an excellent view of the eastern mountain range can be seen from the western side of this stone, it was not manipulated in order to create a specific alignment with anything in the landscape. The stone is only slightly arched across the top therefore it does not mimic any of the peaks in the east (Fig. 120). The top of the stone was carved on the eastern side to create steps leading down from an area above the *huaca* (Fig. 121). In this case I am not classifying this

stone as a repository because the use of the stone as a stairway is so clear. The photograph also illustrates the view obtained when looking to the west, past *Huaca* E6 and E1 (Fig. 121).

Huaca E11

Huaca E11 consists of two stones carved by the Inca to create circular depressions (Fig. 122). Bingham called these stones mortars and he designated this area the "Mortars Group."[108] He further discussed the luxuries an Inca woman must have had to have been provided with "built-in mortars."[109] Bingham stated that the mortars were for grinding food, such as maize.[110] Other scholars disagree with Bingham's hypothesis, which centered on a purely utilitarian function for the mortars. Hemming says that the mortars were used for religious ceremonies due to their small size.[111] The photograph of the *huaca*s illustrates that the circular depressions can hold liquids.

[108] Bingham, Machu Picchu, 82-85.
[109] Bingham, Machu Picchu, 83
[110] Bingham, Machu Picchu, 82-85.
[111] Hemming, 154.

Huaca E12

This is a large boulder that was used as the foundation for a wall on the eastern side of Section E. It was certainly left in its place of origin by the Inca and it was then incorporated into the buildings shown in Figure 123.

Huaca E13

Huaca E13 is a very large boulder embedded in the wall of a structure in Section E. The stone occupies a large percentage of the space in the room in which it stands. It was certainly left in its place of origin by the Inca when they built the structures surrounding it. Part of the stone creates an overhang that may have been used as a place to hold the deceased or offerings (Fig. 124, photo right).

Huaca E14

Huaca E14 is located within a structure in the eastern part of Machu Picchu. It is a very large stone that was incorporated into the building plan of the structure in which it stands (Fig. 125). There are stairs leading up to the top of the stone and niches were built into the wall above. There are other structures at the site with niches high in the walls of the building, but often access to the niches is not possible. Perhaps in the other cases impermanent structures were constructed in order to reach the high niches and in this case the *huaca* was left in place and utilized as a second

floor to reach the niches. It is possible that the *huaca* was also used as a repository for offerings by the Inca.

Huacas E15, E16, and E17

Huacas E15, E16, and E17 are located on the eastern terraces of Machu Picchu (Fig. 126). These stones comprise an interesting set of *huacas* that align with the surrounding landscape in various ways and in one instance create a chamber.

Huaca E15 is a large boulder that was used as a chamber by the Inca. The stone was masterfully incorporated into the walls beside and above the boulder (Fig. 127). A window, facing due east, is a major aspect of this cave, as the sun projects through the window in the morning of the Winter Solstice (June 21st) when the sun rises above the mountain range in the east. The interior of the cave is partially natural stone and partially man-made construction by the Inca. A photograph of the interior of the cave illustrates the two niches in the western wall built by the Inca stonemasons (Fig. 128).

To the north of the cave is another large boulder that aligns with part of Huayna Picchu in the northeast. Figure 129 illustrates the alignment that can be viewed from a seated position approximately eight feet southwest of the stone (Fig. 130).

Huaca E17 is located at the northern end of the terrace where *Huacas* E15 and E16 are found (Fig. 131). From the terrace just below the stone, the southern face of

Huaca E17 can be viewed (Fig. 132). The alignment provided by this stone can be seen from just beneath the overhang created by part of *Huaca* E16 (Figs. 133 and 134). The position required of the viewer to see the alignment is very specific in this instance. The viewer must kneel because the overhang of *Huaca* E16 is so low that a standing position is impossible.

Huaca E18

Inca stonemasons built walls completely surrounding *Huaca* E18 (Fig. 135). Underneath the boulder, which is approximately fifteen feet high, there is an opening that is large enough to crawl into in a crouched position. There are stairs leading down into the enclosed space that is now empty (Fig. 136). There is no evidence of carving within this cave and niches are not present. The only opening to the cave, besides the entrance, is a small sliver of an opening between the stones approximately three to four inches high. The opening faces east but a view of the mountains is impossible and the aperture is so small that light barely enters the cave.

Huaca E19

Huaca E19 is located within the same enclosure as *Huaca* E18. This is a large boulder that was used by the Inca stonemasons as the foundation for a wall, which partially subdivides the structure (Fig. 137).

Huacas E20 and E21

Huaca E21, illustrated in Figure 139, is referred to by many scholars as the "Rock Shrine."[112] *Huaca* E20 is within the same enclosure as *Huaca* E21, located in the southwestern corner of the room, and it was carved on the top to create a repository (Fig. 138).

Huaca E21 was carved by the Inca in order to mimic Yanantin in the east (Fig. 140). The stone is carved in such a way that the pinnacle of the stone seems to mimic Yanantin but the alignment is not as readily apparent as it is with many other *huaca*s at the site. The eastern face of the stone was carved in many places by Inca sculptors to create repositories, possibly for sacred offerings (Fig. 139). The western face was also carved in a curious manner, seen in Figures 141 and 142. Four horizontal shelves were carved into the stone on the eastern face of the rock. Perhaps the Inca used this part of the stone to stand or sit upon while viewing the vast landscape to the east of the site. Presently, this set of steps can only be reached by walking across the top of *Huaca* E21.

The *huaca* also forms a cave, seen in Figure 143. As the photograph illustrates, there is a wall with a window on the eastern side of the cave. The window opens to the east but the Inca placed another structure next to this cave, thus obstructing a view of the eastern landscape. The overhang of the stone within the

[112] Hemming refers to *Huaca* E21 as the "Rock Shrine," in Monuments of the Incas, 154. Bingham said this was a "bowlder with platforms for offerings," in Machu Picchu, 105.

cave was carved, perhaps in order to create more interior space. Like many caves at the site, Bingham found a burial within this cave.[113] Although niches were not incorporated into this cave the opening referred to here as a "window" could have easily served as an offering repository.

This *huaca* is clearly the most sacred stone at the site of Machu Picchu because it embodies three highly religious concepts. *Huaca* E21 is a repository, a cave and a marker. In addition, the visual alignment is a connection with the East, an important and frequently indicated orientation at Machu Picchu.

Huaca E22

This is a very large boulder that was left in its place of origin by the Inca and subsequently incorporated into the structures in the area (Fig. 144).

Huaca E23

Huaca E23 is located in the same open courtyard as *Huaca* E22 on the eastern portion of the estate. A small rock has been placed within the carved section of the *huaca* perhaps indicating the original purpose of the stone as a repository (Fig. 145).

[113] Bingham, Machu Picchu, 105.

Section F

There are nine *huacas* in Section F which is located on the northwestern side of Machu Picchu. *Huacas* F1-F7 are situated in close proximity of one another and *Huacas* F6 and F7 are located to the north of the main group of stones (Map 8 and Fig. 146). One *huaca* in this group is a repository, five stones serve as markers, but there are not any caves in this section. The "Sacred Stone," as it is so popularly known today, is located within this section and is designated as *Huaca* F9 (Figs. 158 - 161).

Huaca F1

This *huaca* is located on the northwestern side of the hill leading up to *Huaca* D10, also known as the *Intihuatana* (Map 8). The stairway pictured in Figure 147 leads up to the it. This is certainly a stone that was left in its place of origin by the Inca as were many boulders in this location of the estate. In this case, however, it is also a marker for San Miguel to the northwest. This alignment may be seen from a standing position in the open courtyard east of the *huaca.*

Huaca F2

Although it was covered in vegetation when the photograph was taken, this stone does visually align with San Miguel in the northwest (Fig. 148). If the vegetation were removed from the stone, an alignment with the mountain could be

clearly viewed from a kneeling position in the courtyard east of the *huaca* (Fig. 149). This is the same courtyard from which the alignment with *Huaca* F1 and San Miguel may be seen.

Huacas F3 and F4

Huaca F3 is a large stone that was left in its place of origin on the western side of a diamond-shaped clearing. A footpath was built up around part of the boulder to the south and it is clear that one must maneuver around the large stone in order to pass (Fig. 150). *Huaca* F4 is much smaller and may be part of the same large outcrop as *Huaca* F3, connected beneath the ground. Both stones cut straight through an otherwise-open terrace.

Huacas F5 and F6

Huacas F5 and F6—like F3 and F4—are two stones that may be part of one large granite slab connected beneath the ground (Fig. 151). The entire terrace, in fact, sits on top of a very large granite outcropping (Fig. 146).

Huaca F7

This *huaca* is located on the northern end of the same granite outcrop as *Huacas* F5 and F6 (Fig. 146). This stone visually aligns with Huayna Picchu in the north and several carved repositories clearly illustrate evidence of human

manipulation. Figures 152 and 153 illustrate the alignment with Huayna Picchu visible from a seated position approximately seven feet south of the stone. The pinnacle of the stone was carved in order to mimic the peak of Huayna Picchu, one of the most prominent features of the estate's landscape. Figure 154 illustrates the eastern face of the stone, which contains several repositories. These shelves may have been used as seats or altars for holding offerings to the stone. A view of the western face of the stone illustrates the stairs and footpath that were constructed around the *huaca* (Fig. 155).

Huaca F8

This stone is located south of the "Sacred Stone," *Huaca* F9. It is on the opposite side of one of two small structures flanking the "Sacred Stone." From a standing position, approximately six feet west of the *huaca*, an alignment with Yanantin in the east is apparent (Fig. 156). The opposite side of the *huaca* also aligns with the surrounding landscape, but one must climb up onto the stone in order to see the alignment with Pumasillo in the west. Standing on the ground, east of the *huaca*, one is too low to see the alignment with Pumasillo (Fig. 157).

Huaca F9

This *huaca* is popularly known as the "Sacred Stone" of Machu Picchu. It is certainly the most documented *huaca* at the site and often it is the example scholars

provide to illustrate the phenomena of visual alignments in Inca estate planning.[114] A short wall was constructed around the stone and the *huaca* is set back within a small open courtyard. To many scholars, this is clear evidence that the stone was sacred to the Inca architects.

From a standing position in the courtyard, approximately ten feet west of the stone, an alignment with Yanantin in the east is clear (Fig. 158). The western face of the stone is illustrated in Figure 159. An alignment with the mountain ranges in the west cannot be seen because the ground slopes down in the east, preventing views of the landscape. Reinhard, in concurrence with the anthropologist Robert Randall, discusses the fact that the stone resembles the snow-capped peak of Pumasillo despite the fact that a visual alignment with the mountain is not possible.[115] Views of the northern and southern faces of the stone may be seen in Figures 160 and 161. The stone aligns with Uña Huayna Picchu in the north but does not exactly mimic the contours of the hill. It does however mark Uña Huayna Picchu's presence (Fig. 160).

Section G

Among the nineteen *huaca*s in this section of Machu Picchu seven stones are categorized as "Repositories" and three are "Markers" (Map 9). None of the *huaca*s

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[114] The following scholars refer to the "Sacred Stone" Bingham, Machu Picchu, 79; Stone-Miller, 190; Reinhard, Machu Picchu, 54-55.
[115] Reinhard, Machu Picchu, 55

in this section are "Chambers." Many of the *huaca*s are embedded within the structures of the area or they are enclosed within buildings or plazas.

Huaca G1

This *huaca* is embedded within the outer side of a wall on the southern side of Section G. It stands out in an open walkway located above the terrace on the eastern side of the so-called "Main Square" of Machu Picchu (Map 9). The stone was carved on the western face creating a repository that may have been used to hold offerings, or a seated human (Fig. 162). The significance of the *huaca* as a seat is apparent when a view of the *Intihuatana*, *Huaca* D10, is seen through a window of the structure located south of the stone (Figs. 163 and 165). The structure has three windows facing the west but the Intihuatana can be viewed through the window on the right only and nothing else of significance can be viewed through the other widows (Fig. 164). This structure was definitely roofed but there is not a continuous wall on the eastern side of the building, leaving an open space and an unhindered view through the window of the structure (Fig. 165).

Huaca G2

Huaca G2 is a very large granite outcropping that has not been excavated by modern archaeologists (Fig. 166). Due to the vegetation covering the stone, it is impossible to know the extent of the carving on the boulder, but future archaeology

of the hill could reveal many repositories. There does appear to be an alignment between this outcrop and Uña Huayna Picchu, however. Standing next to *Huaca* G8, south of the boulder, one can see a very clear alignment with Uña Huayna Picchu in the north (Fig. 167).

Huaca G3

This stone is enclosed within one of the structures on the southern part of Section G. Alignments with the landscape are not readily apparent but there must have been some reason that the Inca left this *huaca* within a room. It does not show evidence of carved repositories, and therefore may have been a representation of the sacred landscape utilized by the Inca for worship of nature in a more intimate setting (Fig. 168). As the section map illustrates, the stone only occupies a small percentage of the room in which it stands, but the fact that it was left in the space at all, is significant (Map 9).

Huaca G4

This stone lies across the open side of a room within the structures in the northeastern part of the estate (Fig. 169). The top of the boulder was evidently carved by the Inca in order to create a repository. The stone may have been left in place by the Inca in order to complete the eastern wall of the structure. The *huaca* occupies nearly the entire opening of the room, thus creating a partial barrier. It

obviously does not serve the same purpose as a full wall, but it was not removed. As with many *huacas* in the immediate vicinity, it may have been intended as a representation of the sacred landscape within the intimate setting in which it lies.

Huaca G5

Although this stone is now enclosed by walls built by the Inca, it is possible to see that an alignment with Machu Picchu mountain in the south was once apparent to the occupants of the estate. The roof, now gone, would have prevented such a clear visual alignment, but it is likely that the Inca were aware of the alignment without the need to see it on a daily basis (Figs. 170 and 171).

Huaca G6

Huaca G6, located within the same large structure as *Huacas* G4 and G5, appears to have been placed in the opening of the smaller structure in order to complete the western wall of the building (Fig. 172). The simple rectangular form of the stone suggests that it was utilized as a repository, and not as a marker.

Huaca G7

Huaca G7 is embedded within the outside corner of a structure in the center of Section G (Map 9). It is partially built into the outside of the wall but does not continue through the wall and it does not appear on the inside of the structure (Fig.

173). The stone partially supports a structure and it may have been used as an altar by the Inca. It occupies a large percentage of the open area in which it stands and is an imposing *huaca*, the size of which requires maneuvering around the stone in order to pass through to other structures.

Huaca G8

Huaca G8 is another large boulder that was left in its place of origin by the Inca (Fig 174). This large stone is flat on the top and it extends down to the pathway below. It was carved to create a repository that may have been a large altar used in Inca ceremonies.

Huaca G9

This stone is located in the walkway below *Huaca* G8 (Figs. 175 and 176). It was built into a wall but it is not large enough to extend completely through the thick Inca stone construction. There appears to be a small horizontal shelf on the top of the stone (Fig. 175).

Huaca G10

Huaca G10 is partially embedded in a short wall (approximately two feet high) on the eastern side of Section G. This is a large boulder that rises to a rounded pinnacle, yet it does not visually align with the surrounding mountain peaks. The

northern face of the stone does not align with Huayna Picchu (Fig. 177). The western face of the stone could be a representation of Machu Picchu mountain, even though an alignment with the southern mountain is not possible (Fig. 178). Putucusi, in the east, can be seen just above the top of the eastern face of the stone but the mimesis is not exact, as it is with other *huaca*s of the site (Fig. 179).

Huaca G11

This is a large boulder located north of *Huaca* G10. The northern face of the stone does not reveal a visual alignment with Huayna Picchu (Fig. 180) but the pinnacle of the stone on the southern face aligns with part of Machu Picchu mountain in the south (Fig. 183). There is a small, three-walled structure north of the *huaca* that opens out to the stone in the south. From a kneeling position within the small building, one can see the alignment with Machu Picchu in the South (Figs. 181 - 183). The point where the stone drops off on the eastern side visually aligns with the *Intipunku* (Fig. 183, photo left).

Huaca G12

Huaca G12 is a granite outcrop that was clearly left in its place of origin by the Inca stonemasons. The stone rises from the ground directly in the center of a main walkway of Section G. (Figs. 184 and 185). A visual alignment with the

surrounding landscape is not apparent, as it is a low-lying stone, but the Inca may have conceptualized this *huaca* as a representation of the landscape.

Huaca G13

This is an extremely large boulder that was certainly left in its place of origin by the Inca. The Inca built around, and on top of this *huaca* on three sides, leaving the boulder between two small structures on the eastern side of Machu Picchu (Fig. 186).

Huaca G14

Huaca G14 is an extremely large *huaca* that was left in its place of origin and subsequently used in the construction of several walls by Inca stonemasons (Fig. 187). As Figure 188 illustrates, this massive stone became a significant foundation for a large wall.

Huaca G15

Huaca G15 is a short, wide stone that goes completely through the western wall of a building (Figs. 189 - 191). Approximately five inches of the stone protrudes from the eastern face of the wall. The Inca stonemasons built the wall as if the stone was not there, abbreviating one of the niches in the wall (Fig. 189). Due to the

physical connection between the *huaca* and the niche above, the stone was probably also utilized as a repository (Figs. 189 and 191).

*Huaca*s G16, G17, G18, and G19

At first glance, four *huaca*s seem to randomly occupy an open terrace on the northeastern side of Machu Picchu (Fig. 192). The individual stones range in height from approximately one to three feet (Figs. 193 - 196). All of the *huaca*s are freestanding, except for *Huaca* G19, which is partially embedded in a wall. The four stones are set out in a courtyard that opens to the east and a full view of the eastern landscape can be seen from this courtyard.

The low-lying nature of the stones prevents any visual alignments with the surrounding mountains but the Inca may have looked upon this group of *huaca*s as a miniature representation of a landscape of mountains. The practice of recreating the landscape in miniature, as it is with *Huaca*s G16 – G19, is somewhat similar to the concept of the Zen rock gardens built by Buddhist monks in Asia.

Uña Huayna Picchu

There are two *huaca*s on the peak of Uña Huayna Picchu, which is located to the south of Huayna Picchu (Fig.10, photo left). The panoramic view from the top of this hill lends itself to several visual alignments with the landscape. Both *huaca*s, designated in this study as UP1 and UP2, are "Markers" and UP2 is also carved to

form a "Repository." Neither of the two *huaca*s can be classified as a "Chamber," however.

Huaca UP1

This stone is situated near the center of the peak of Uña Huayna Picchu. There is a clear alignment between this *huaca* and the nearby peak of Huayna Picchu to the north when one kneels approximately two feet to the south of the stone (Fig. 197). If viewed from the northern side of the stone, the *huaca* resembles the two peaks of Huayna Picchu and Uña Huayna Picchu. From the western side of the *huaca*, an alignment can be seen with Putucusi in the east (Fig. 198).

Huaca UP2

This *huaca* forms a visual alignment with the mountain peak of Veronica. Standing on the slope of the hill, just below and northwest of the *huaca*, the alignment with the snowcapped peak of Veronica is clear (Fig. 200). This stone has also been carved to create a repository on the southeastern face of the stone (Fig. 199). When seated on this *huaca* a full view of the northwestern mountain ranges can be seen.

Huayna Picchu

The slopes of Huayna Picchu are also dotted with *huaca*s, fifteen of which are documented in this dissertation. There are many stones that align with the surrounding landscape, which is not surprising, given the higher altitude of the site (Fig. 10). In fact, seven *huaca*s—exactly half of the total number—are "Markers." Five *huaca*s are repositories and two are caves. One of the caves is the popularly known "Temple of the Moon," (*Huaca* HP1) located on the northeastern face of the mountain.

Huaca HP1

The entire structure of the "Temple of the Moon," has been designated as *Huaca* HP1 in this dissertation (Fig. 201). The Inca built walls with double niches and repositories within the large cave. Clearly this was an important location to the builders of Machu Picchu, which is why people now prefer to give it a significantly sacred name such as the "Temple of the Moon." In fact, modern travelers still deposit small stones, creating miniature *huaca* towers, within the cave as an offering to thank the gods for a good journey. The cave is approximately twenty feet, gradually becoming smaller and smaller and ending in a small dark chamber.

Huaca HP2

Huaca HP2 is located within the mouth of the cave, HP1 (Fig. 202). This stone was carved in several places on the eastern face to create repositories. The largest could easily serve as a seat from which a view of the northeastern mountain range can be seen. Figure 203 illustrates the view from the western side of the *Huaca* HP2, which would be the same view of the mountain range from the seat. As the photograph also shows, the *huaca* does not mimic the mountains in the northeast.

A series of horizontal shelves has been carved into the northwestern side of the stone (Fig. 202, photo right). The carving resembles a small stairway, but the horizontal planes also may have been used to hold offerings.

Huaca HP3

This stone is further within the cave (*Huaca* HP1) and it is located in close proximity to the wall of niches that the Inca incorporated into the structure of the cave (Fig. 204). A repository was carved into the western face of the *huaca* (Fig. 205). When one is seated on it, this horizontal shelf provides a view directly into the depths of the cave. Therefore, it was most likely carved in order to provide a depository for offerings.

Huaca HP4

Huaca HP4 is located approximately twenty feet outside, and northeast of the cave (*Huaca* HP1). It was carved low to the ground to create a repository (Figs. 206 and 207). Seated on the horizontal shelf, one is able to view the cave to the right and the northeastern mountain range on the left.

Huaca HP5

This stone is embedded within an Inca structure on the southeastern slopes of Huayna Picchu (Fig. 208). The bottom part of the *huaca* was incorporated into the lower wall of the structure (Fig. 209). The top of the stone may have been a repository for offerings within this small structure standing alone on the slopes of Huayna Picchu.

Huaca HP6

This *huaca* is located approximately ten feet to the west of the structure holding *Huaca* HP5. The visual alignment with San Miguel in the south is exact in several places across the top of the stone (Fig. 210). A person of approximately five feet and five inches in height, standing upright, two feet to the north of the *huaca* can see this nearly perfect alignment between stone and mountain (Fig. 211).

Huacas HP7 and HP8

Huaca HP7 is located on the northeastern slopes of Huayna Picchu. Interestingly, the southeastern face of the stone somewhat resembles a human body in profile leaning forward in a titled position (Fig. 212 and 213). If that was indeed the intent of Inca sculptors, then this is the only figural sculpture in all of Machu Picchu.

From the "backside," or southwestern side of *Huaca* HP7, an alignment with *Huaca* HP8 can be seen (Fig. 214). As the photograph illustrates, *Huaca* HP8 is another upright stone on the northeastern slopes of the mountain. Although both *huaca*s, HP7 and HP8, point towards the northeastern mountain range, neither is carved in such a way as to mimic specific parts of the landscape.

Huaca HP9

The peak of Huayna Picchu is entirely made up of gigantic granite outcroppings. In spite of this, the Inca continued to construct walls and structures nearly to the top of the mountain. Figure 215 illustrates a stone wall that the Inca built on the northeastern slopes of Huayna Picchu, very close to the peak. *Huaca* HP9 is located just below the wall on the steep slopes leading up towards the peak (Fig. 216). Standing on the southwestern side of the stone, an alignment with the mountains in the northeast can be seen (Fig. 217).

Huaca HP10

Huaca HP10 is also located near the peak of Huayna Picchu, on the southern slopes of the mountain. This stone comes up to a point at the top that directs the eye towards Machu Picchu mountain in the south (Fig. 218). There is also a small and very shallow repository carved into the northern face of the *huaca* that was most likely utilized as a place to hold offerings.

Huaca HP11

Huaca HP11 is enclosed within a structure on the southwestern face of Huayna Picchu (Figs. 219 and 220). It is a small stone that only occupies a minimal amount of space within the one-roomed structure, therefore it would not have impeded anyone or anything else from occupying the same area.

Huaca HP12

Huaca HP12 is a chamber on the southwestern slopes of Huayna Picchu (Fig. 221). A more accurate description of this *huaca* would actually be "tunnel" as it is a narrow passageway leading up the steep slopes of the mountain. The tunnel includes stairs that were carved from the living rock, and although the space is small, it is possible for people of average size to enter through the openings on either end and crawl through to reach the other side (Fig. 222).

Huacas HP13 and HP14

Huaca HP13 is below HP12 on the southwestern slopes of Huayna Picchu. From a kneeling position, approximately five feet north of the stone, a visual alignment with Machu Picchu Mountain can be seen (Fig. 223). As the photograph illustrates, in this example the sculpted stone's mimesis of the mountain is exact. The stone slopes downwards from the viewer's left to the right and the point where the stone begins to slope upwards again indicates the exact location of the *Intipunku* on Machu Picchu Mountain. A view of the northeastern face of the stone does not present any visual alignments (Fig. 224) but the northwestern side of the *huaca* does align with San Miguel (Fig. 225). Similarly, *Huaca* HP14, which is located in close proximity to *Huaca* HP13, also aligns with San Miguel in the northwest (Figs. 226 and 227).

Huaca HP15

Huaca HP15 is located on the western slopes of Huayna Picchu (Fig. 228). The top of the stone visually aligns with San Miguel in the northwest.

Conclusions

Several significant conclusions may be drawn from this extensive and detailed analysis of the *huacas* of Machu Picchu. It is important to view the *huacas* in a comprehensive manner in order to see clearly recurring themes as well as unique

instances of Inca stone sculpture. Looking again at the categories of Machu Picchu *huaca*s provides a great deal of information about the Inca concept of architectural planning.

*Huaca*s that are "Markers," "Chambers," and "Repositories" [116]

Of the 122 *huaca*s at Machu Picchu there are forty-four "Repository" *huaca*s, as chart 1 illustrates. Further analysis of the data shows that the majority of the "Repository" *huaca*s are clustered in close proximity to each other, primarily within the central portion of the estate. There are thirty-five *huaca*s located in and around the structures found in Sections B-G of the site (see Maps 3-8). The remaining "Repository" *huaca*s—only eight stones—are located in open areas such as Section A, Uña Huayna Picchu, and Huayna Picchu. This suggests that the function of the "Repository" during the occupation of Machu Picchu by the Inca was closely linked to architecture, specifically to closed spaces within the confines of the estate.

I argue that one of the main functions of the "Repository" *huaca*s was as an altar for holding offerings. I further hypothesize that the "altar" stone designates a sacred space at Machu Picchu. I believe that the scattering of these "Repository" *huacas*/altars throughout the various buildings of the estate, instead of clustering them in a particular section, illustrates an important aspect of Inca ideology in

[116] As I noted in the introduction of this chapter the three category names were taken from Maarten van de Guchte's study of Inca carved stone.

relation to architectural planning. The "altar" *huacas* therefore show that the Inca did not make a clear distinction between sacred and non-sacred space in their planning, but instead, believed that all structures, even the most common living space, was imbued with sacredness.

The "Chamber" *huaca*s, also referred to in this dissertation as "overhangs" or "caves," are another of van de Guchte's "Three categories of carved stones." In my opinion they signify the presence of the sacred spirit in my opinion. Many of these "cave" *huacas* are located towards the center of Machu Picchu, but the most impressive example, the so-called "Temple of the Moon" (*Huaca* HP1), is located on the slopes of Huayna Picchu. The majority of "Chamber" *huaca*s can be found in Sections B, C, and E of Machu Picchu (Maps 3, 4, and 6).

I believe that the significant aspect of these caves is not the location of the stones, but the orientation of the opening of the structures. The majority of *huaca*s designated as "chambers" open to the east. In fact ten *huaca*s out of sixteen open to the east, which I believe to be significant because of the connection between the east and sunrise. As numerous scholars of Inca religion have indicated, the sun in the east was considered to be sacred by the Inca.[117] This is yet another example of the way in which *huaca*s reinforce the sacred nature of Machu Picchu.

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[117] For more on the Inca religion in relation to the cardinal directions, such as the east, see Sabine MacCormack, 98-118.

"Marker" *huaca*s, also referred to as "alignment" *huaca*s in this dissertation, are possibly the most sacred *huaca*s at Machu Picchu. There are twenty-five "Marker" *huaca*s within the estate, two on the peak of Uña Huayna Picchu, and seven on the slopes of Huayna Picchu. Chart 2 illustrates each one of the *huaca*s, several of which align visually with two or three different points on the landscape around the estate. It is important to address the orientation of these "Marker" *huacas* at this point.

Based on the evidence concerning the eastern orientation of most of the caves at Machu Picchu, one would expect that the "Marker" *huaca*s would follow this pattern and also orient the viewer's gaze towards the east. Chart 3 shows that the *huaca*s orient equally towards all four cardinal directions. There are thirty-four "Marker" *huaca*s and a total of forty-six "alignments" recorded in this dissertation.[118]

There are twelve instances in which *huaca*s visually align with the landscape in the east. Seven *huaca*s align with the extremely prominent peak of Yanantin, one with Putucusi, and two with the snow-capped mountain peak of Veronica. I believe the large number of alignments with Yanantin suggests the Inca's reverence for that mountain. This reiterates a point made by Johan Reinhard to the same effect in his book about Machu Picchu.[119] I also believe that there is a strong connection between

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[118] Many *huaca*s align with several different points in the landscape, therefore the number of *huaca*s in this category is thirty-three, and the number of "alignments" is forty-four.

[119] Reinhard refers to the connection between the "Sacred Rock" and Yanantin in Machu Picchu, 54-55.

these *huacas* and the sun, because it rises directly behind the mountain peak during the June solstice every year.

There are also ten instances in which there is a visual alignment between *huacas* and the northern landscape. This fact is not surprising at all, because the peaks of Uña Huayna Picchu and Huayna Picchu are situated to the north of Machu Picchu. Given the evidence of the fact that the Inca worshipped mountains, it is not hard to understand why the builders of Machu Picchu would have a particular reverence for the peak of Huayna Picchu, which aligns with six *huacas* within Machu Picchu.

Another highly significant orientation for the Inca inhabitants of Machu Picchu was clearly the south, specifically Machu Picchu Mountain. Of the eight *huacas* that orient the viewer's eye towards the south, all of them indicate some part of Machu Picchu Mountain. I have also discovered that four of those nine *huacas* specifically indicate the *Intipunku*. It is extremely significant that the Inca visually marked the ancient gateway to the estate in four different instances. In each case the stone slopes downwards, mimicking the downward slope of the mountain, and directing the viewer's eye to the precise location of the *Intipunku* (see Figs. 22, 167, 179, and 218). Although the *Intipunku* was not the only entrance to Machu Picchu when it was constructed in the fifteenth century, it is my belief that it was the most significant entryway based on the fact that the architecture at this point is rather more elaborate than just a simple entryway.

The remaining *huacas* at Machu Picchu align with the mountain peak of San Miguel in the northwest, San Gabriel in the southeast, Pumasillo in the west, and parts of the extensive Veronica mountain range in the northeast. The most significant in this sample being the eight *huacas* that align with San Miguel.

Huacas that are "Embedded," "Enclosed," and "Freestanding"

Analysis of three additional categories of *huacas* at Machu Picchu reveals significant data leading to important conclusions regarding the estate. There are twenty-five *huacas* that are "Enclosed" within structures or plaza areas of the site. There are also twenty-five stones, designated as "Freestanding" *huacas*, that do not lie within close proximity to the architecture of Machu Picchu.

The vast majority of *huacas* at Machu Picchu are designated as "Embedded" *huacas* in this dissertation. Seventy *huacas* are embedded within the architecture of Machu Picchu. These *huacas* are stones that were built into the architecture, but that were not worked by Inca stonemasons to adhere to the rectangular form of the other building stones used to create structures. The work of van de Guchte, Reinhard, Urton, and many others, clearly indicates that the Inca believed that *huacas* were animated beings, with the spirit of the supernatural gods. I posit that the incorporation of *huacas* into the architecture at Machu Picchu by Inca stonemasons was a purposeful attempt to strengthen the spiritual power of the structures. The fact that this occurs in seventy structures at Machu Picchu leads me to hypothesize that

this was most certainly an important spiritual site for the Inca. Many scholars and amateurs alike have made broad statements concerning the spiritual aspect of this site, but the *huacas* in this study offer clear proof to support such a statement.

Conclusion

Although Machu Picchu historically has been considered a very spiritual place, heretofore no systematic, documented research has been conducted to support this concept. The detailed analysis of the numerous and varied ways in which *huacas* served to facilitate, even choreograph, Inca ritual have been established and my discussion of their use throughout the site demonstrates that the Inca of the fifteenth century created a highly intellectual plan for this royal estate.

The *huacas* do not always take the same form, but I believe that they all served a similar religious function for the Inca inhabitants of the estate. I hypothesize that the act of manipulating the stone, however slightly, was most likely the very action that activated the sacredness of the stone. The Inca created certain *huacas* to facilitate mountain worship, by manipulating the stones so that visual alignments with the mountains emphasized a connection between the Inca, the sacred mountain, and the gods. They created other *huacas* by manipulating stones to form or simply enlarge existing open spaces such as caves. According to Hiram Bingham, some of these spaces contained human burials, and ethnographic analysis from Colonial literature indicates that this would have been a highly sacred function for caves. Finally, the carvings on many *huacas* to create horizontal shelves seems to further indicate a religious function for these stones. Perhaps these repositories carved into the stone were used to hold offerings, or as some have suggested, as a stage for

sacrifice. Although the exact use of such repositories remains uncertain, I hypothesize that they indicate some kind of ritual element.

There is one *huaca* in particular that I believe may have been considered the most sacred at Machu Picchu by the designers and inhabitants of Machu Picchu. I contend that the stone designated as *Huaca* E21 in this dissertation would have been considered the most sacred *huaca* at Machu Picchu by the Inca for three important reasons. Unlike any other *huaca* at the site, it is a "Repository," "Chamber," and "Marker" all in one entity. This extremely large stone was altered to create a chamber, with a window that faces northeast. It was manipulated in order to visually align with the mountain peak of Yanantin, and it was also carved on many sides, including the eastern face of the stone, to create horizontal shelves that were most likely used to hold offerings. I am not the first to hypothesize that this is a special stone at Machu Picchu. In fact Hemming designated this stone on his map of the site at the "rock shrine."[120] I am the first, however, to theorize that this stone is the most sacred *huaca* because of its connection to Inca creation mythology (the cave) and mountain deities (the alignment with Yanantin).

However, *Huaca* E21 is only one of many *huaca*s at Machu Picchu that continually reinforced the sacred nature of the site to its inhabitants. As chapter 3 illustrates, there are stones throughout the entire site, which I hypothesize served ritual functions and have therefore designated them as *huaca*s. I believe these *huaca*s

[120] Hemming, 120-121.

would have been considered animate beings that provided a critically important connection between humans and the supernatural world.

I also suggest that the Inca practiced geomancy, like certain Asian cultures, and, as John Carlson has shown, Mesoamerican cultures. The fact that certain *huaca*s are located above natural cavities in the earth is evidence of geomancy, or site planning based upon geographical features. Further evidence can be seen in the fact that humans must kneel, sit, or stand at precise distances from certain *huaca*s in order to view alignments with the surrounding landscape. I posit that this evidence of geomancy further proves that the Inca planned the estate of Machu Picchu in a very calculated manner. This is clear evidence of highly intellectual architectural planning on the part of the Inca.

By choreographing ritual behavior, the *huaca*s articulate different types of symbolic space at Machu Picchu. The most spiritually sacred spaces are the naturally occurring features emphasized by the stones. The stones themselves, the caves, the horizon features, and the associated celestial phenomenon all interact with one another. The least sacred (or most profane) space is the non-oriented space away from the *huaca*s, the unfocused space of everyday human activity. Between these two symbolically spatial extremes lies the space of the ritual participant, positioned at a *huaca* to view and symbolically establish a link between the sacred and profane realms. When so positioned, the viewer defines a type of liminal space, a space between the purely profane and the purely sacred, which exists only in closely

choreographed proximity to the specific *huaca*. In this manner, the viewer/participant serves a priestly function, as a spiritual conduit or vessel through which sacred energy flows between the two realms. I suggest that, given the large number and distribution of now-documented *huaca*s at Machu Picchu, which apparently functioned in such a way, that this was a wide-spread and common use of the site, and provides an underlying rationale for site orientation and design.

Further research in this field of study would include investigation of Machu Picchu to determine any other *huaca*s that have not, as yet, been identified. The surrounding mountain peaks and nearby Inca archaeological sites should also be closely investigated, using the criteria presented in this dissertation, in order to discern if there are similar *huaca*s elsewhere in the Sacred Valley. Evidence of subsequent *huaca*s in other areas would certainly strengthen the theories presented here concerning Inca ritual practice and site planning.

Although ethnohistorical accounts cannot be utilized by scholars who study Machu Picchu, I posit that the extensive number of *huaca*s documented in this dissertation speaks volumes for a culture that did not provide written evidence of their own. The Inca stonemasons of Machu Picchu have provided a significant amount of proof for scholars to understand their royal estate and the complex manner in which the *huaca*s dictated human behavior.

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Charts

Chart 1: Categorization of the *Huacas* of Machu Picchu

	Marker	Chamber	Repository		Embedded	Enclosed	Free-standing
Huacas							
A1							1
A2	1		1				1
A3	1	1			1		
A4					1		
A5	1		1		1		
A6							1
A7					1		
B1	1				1		
B2					1		
B3					1		
B4	1				1		
B5			1		1		
B6a		1			1		
B6b			1		1		
B7	1						1
B8						1	
B9		1			1		
B10					1		
B11			1		1		
B12					1		
B13			1		1		
B14			1		1		
B15			1			1	
B16			1			1	
B17		1	1		1		
B18			1		1		
B19	1		1				
C1		1			1		
C2					1		

	Marker	Chamber	Repository		Embedded	Enclosed	Free-standing
C3					1		
C4		1	1				
C5					1		
C6					1		
C7			1			1	
C8			1			1	
C9		1			1		
C10						1	
C11	1		1		1		
C12					1		
C13					1		
D1						1	
D2						1	
D3			1			1	
D4			1		1		
D5			1			1	
D6			1			1	
D7					1		
D8		1			1		
D9					1		
D10	1		1			1	
D11	1				1		
D12	1				1		
D13	1					1	
D14		1			1		
E1	1				1		
E2					1		
E3					1		
E4			1		1		
E5			1		1		
E6					1		
E7	1		1			1	
E8					1		

	Marker	Chamber	Repository		Embedded	Enclosed	Free-standing
E9			1		1		
E10					1		
E11			1			1	
E12					1		
E13		1			1		
E14			1		1		
E15		1			1		
E16	1				1		
E17	1				1		
E18		1			1		
E19					1		
E20			1		1		
E21	1	1	1		1		
E22					1		
E23			1			1	
F1	1						1
F2	1						1
F3					1		
F4					1		
F5							1
F6							1
F7	1		1		1		
F8	1						1
F9	1					1	
G1			1		1		
G2	1						1
G3						1	
G4			1			1	
G5	1					1	
G6			1			1	
G7			1		1		
G8			1		1		
G9			1		1		

	Marker	Chamber	Repository		Embedded	Enclosed	Free-standing
G10					1		
G11	1				1		
G12						1	
G13					1		
G14					1		
G15			1		1		
G16							1
G17							1
G18							1
G19					1		
UP1	1						1
UP2	1		1				1
HP1		1			1		
HP2			1			1	
HP3			1			1	
HP4			1				1
HP5			1		1		
HP6	1						1
HP7	1						1
HP8							1
HP9	1						1
HP10	1		1				1
HP11						1	
HP12		1					1
HP13	1						1
HP14	1						1
HP15	1						1
totals	**34**	**15**	**44**		**70**	**25**	**25**

Chart 2: Orientations of the "Marker" *Huacas* of Machu Picchu

Huaca	**Alignment with...**	**Orientation**
A2	Yanantin	Northeast
	San Miguel	Northwest
	Pumasillo	West
A3	San Miguel	Norhtwest
A5	San Gabriel	Southeast
B1	Machu Picchu Mountain	South
B4	Una Huayna Picchu	North
	San Miguel	Northwest
B7	Yanantin	Northeast
B19	Putucusi	East
C11	Yanantin	Northeast
	Huayna Picchu	North
	San Gabriel	Southeast
D10	Huayna Picchu	North
D11	Machu Picchu Mountain	South
D12	Yanantin	Northeast
	Una Huayna Picchu	North
D13	Veronica	Southeast
D14		
E1	Machu Picchu Mountain	South
E7	San Gabriel	Southeast
	Huayna Picchu	North
	Machu Picchu Mountain	Southwest
E16	Huayna Picchu	Northeast
E17	Yanantin	Northeast
E21	Yanantin	Northeast
F1	San Miguel	Northwest
F2	San Miguel	Northwest
F7	Huayna Picchu	North

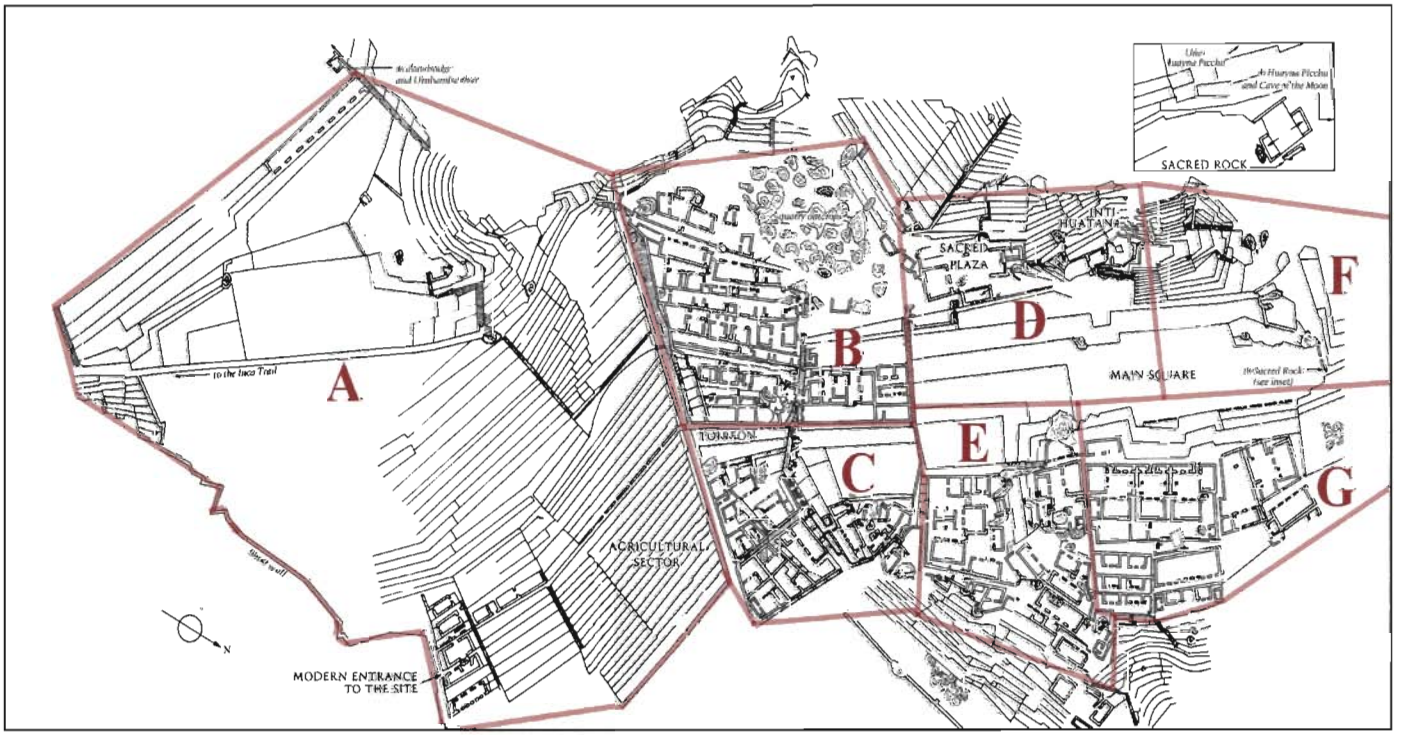
Huaca	**Alignment with…**	**Orientation**
F8	Yanantin	Northeast
	Pumasillo	West
F9	Yanantin	Northeast
	Una Huayna Picchu	North
G2	Una Huayna Picchu	North
G5	Machu Picchu Mountain	South
G11	Machu Picchu Mountain	South
UP1	Putucusi	East
	Huayna Picchu	North
UP2	Veronica	Southeast
HP6	San Miguel	Northwest
HP7	Yanantin Range	Northeast
HP9	Yanantin Range	Northeast
HP10	Machu Picchu Mountain	South
HP13	Machu Picchu Mountain	South
	San Miguel	Northwest
HP14	San Miguel	Northwest
HP15	San Miguel	Northwest
Total Alignments: 46		

Chart 3: The Cardinal Orientations of the "Marker" *Huacas* of Machu Picchu, by quantity

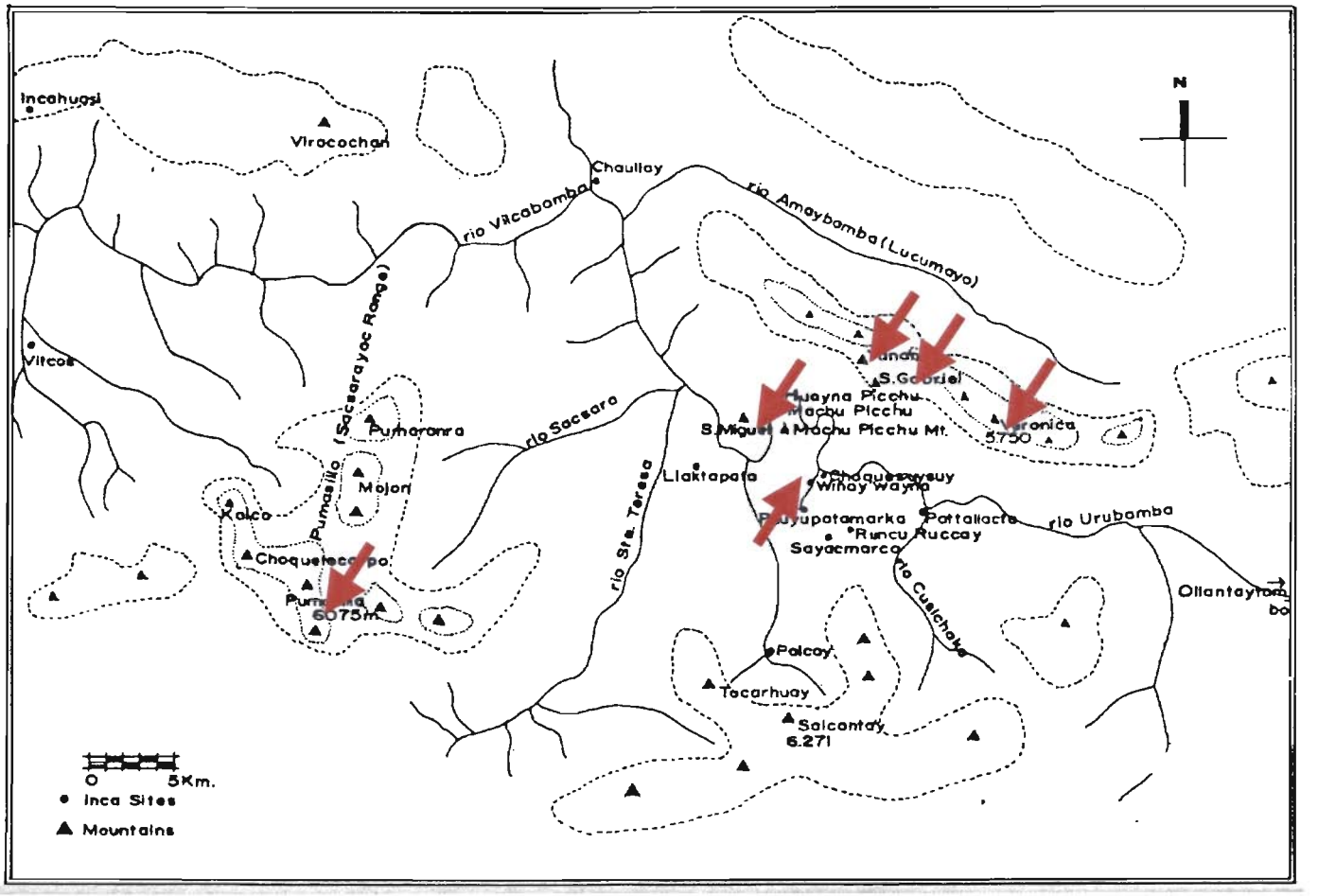
	North	Northeast	East	Southeast	South	Southwest	West	Northwest
Huaca								
A2			1				1	1
A3								1
A5				1				
B1					1			
B4	1							1
B7			1					
B19			1					
C11	1		1	1				
D10	1							
D11					1			
D12	1		1					
D13			1					
E1					1			
E7	1			1	1			
E16	1							
E17			1					
E21			1					
F1								1
F2								1
F7	1							
F8			1				1	
F9	1		1					
G2	1							
G5					1			
G11					1			
UP1	1		1					
UP2			1					
HP6								1
HP7		1						
HP9		1						

	North	Northeast	East	Southeast	South	Southwest	West	Northwest
HP10					1			
HP13					1			1
HP14								1
HP15								1
totals	**10**	**2**	**12**	**3**	**8**	**0**	**2**	**9**

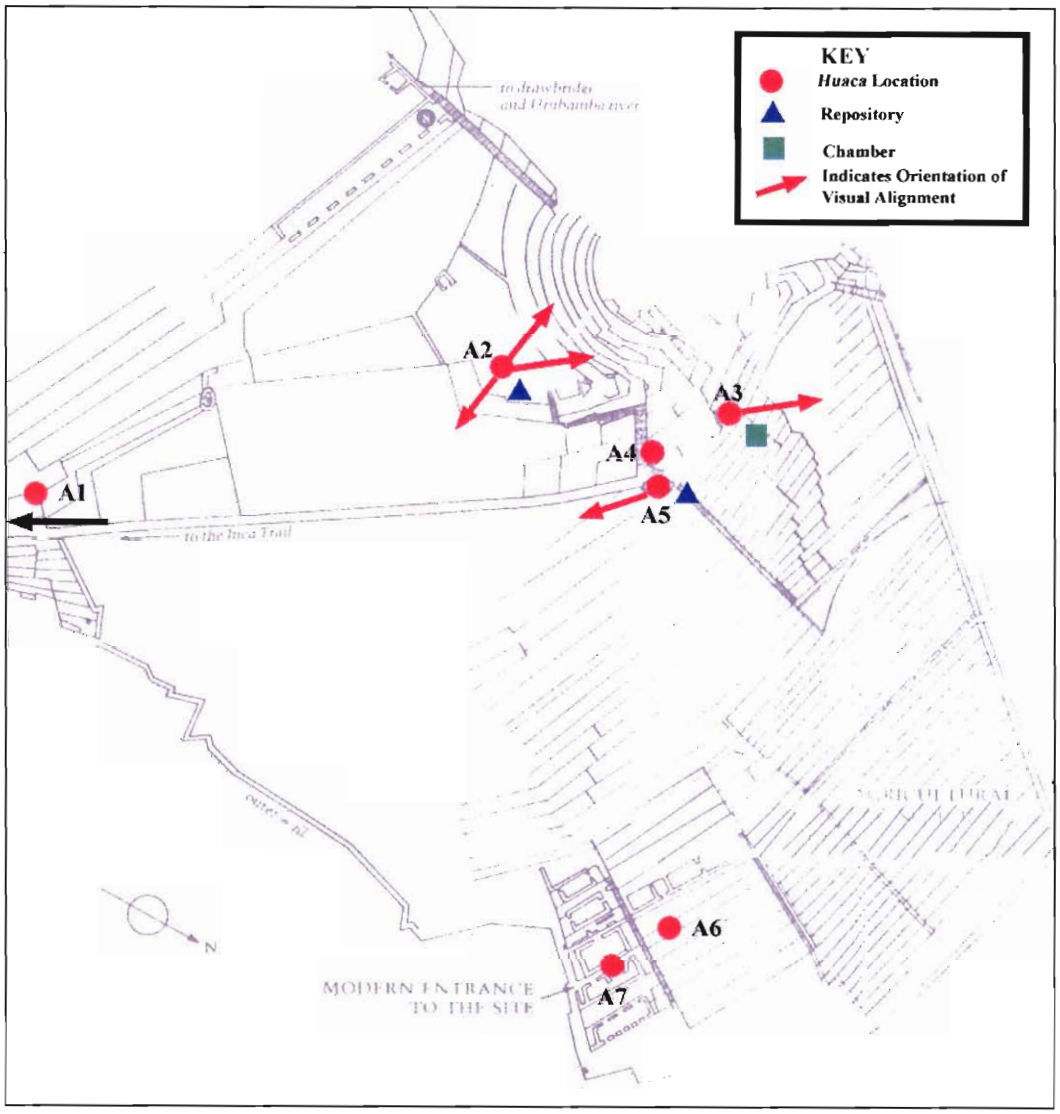
Maps



Map 1: Estate of Machu Picchu

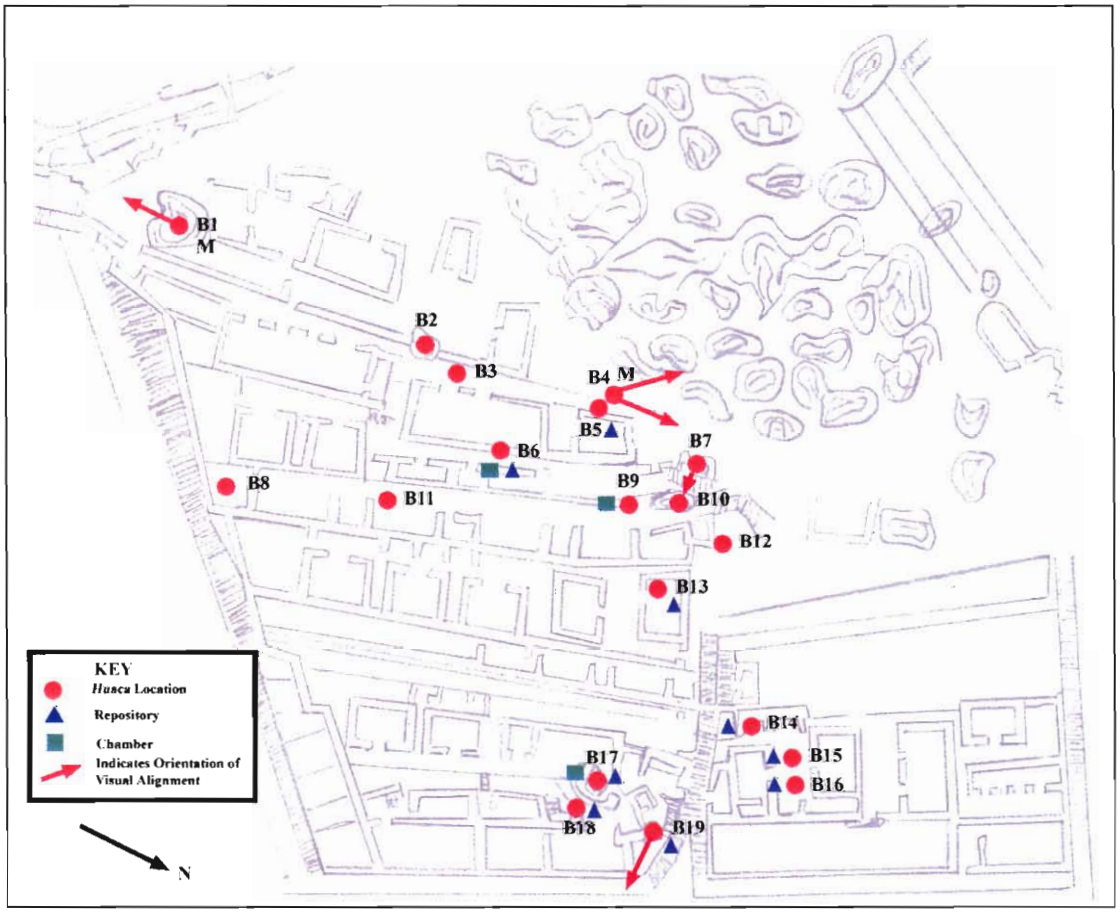


Map 2: Region surrounding Machu Picchu.

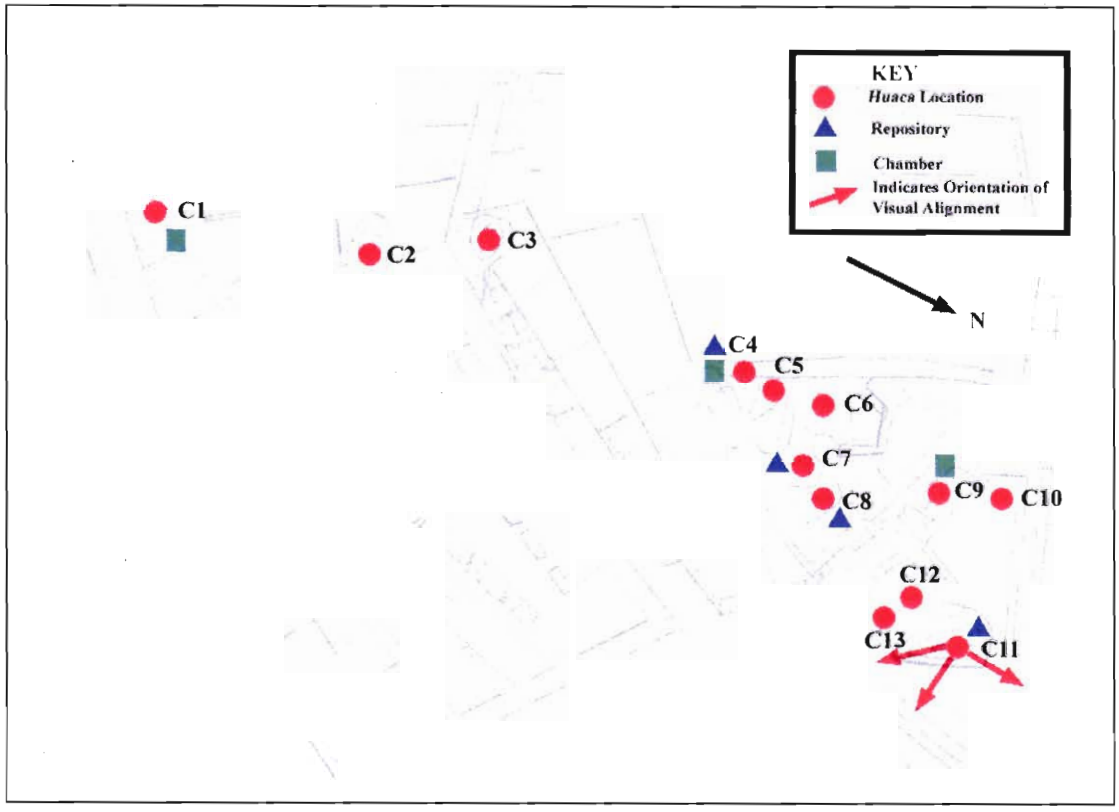


Map 3. Section A

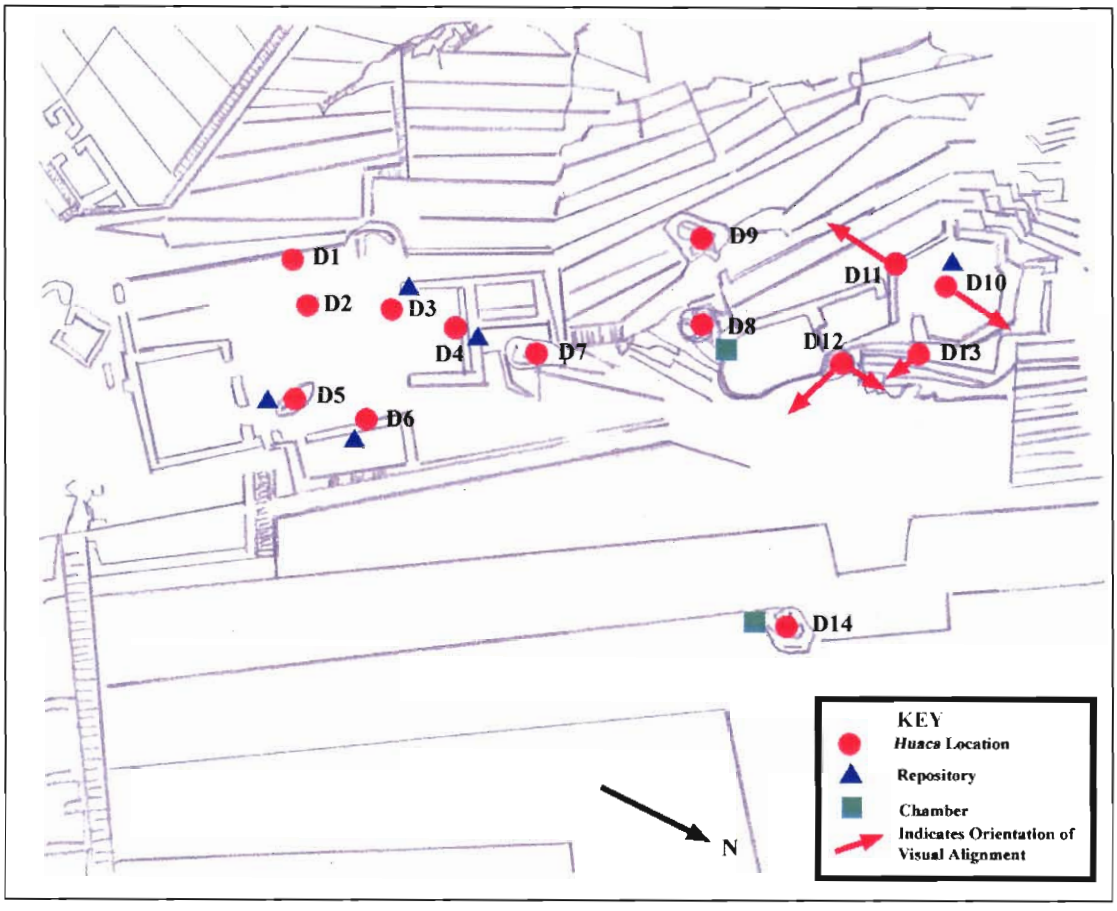
* *Huaca* A1 is located off the map, approx. 100' south of the indicated position (cf. Fig. 11).



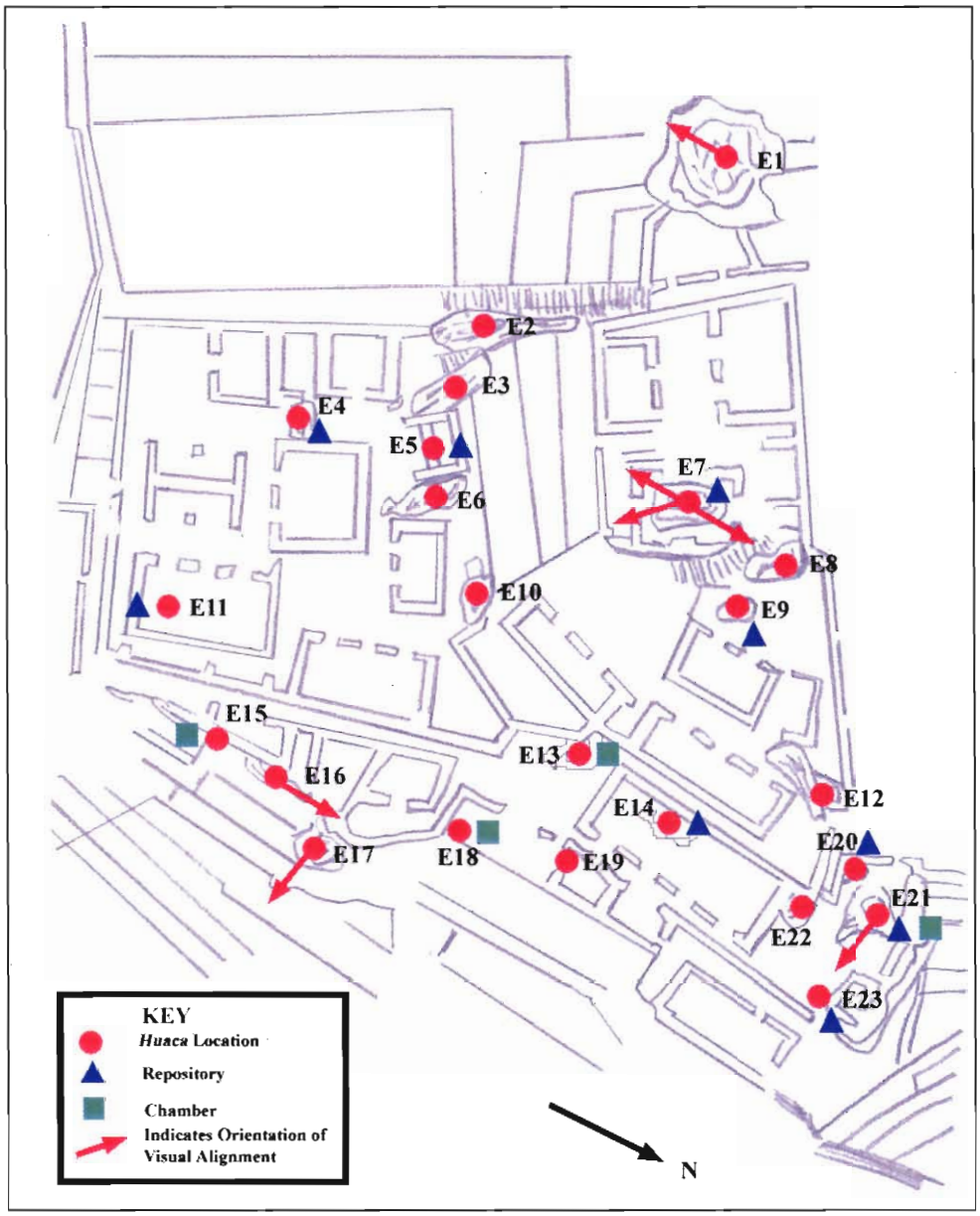
Map 4. Section B



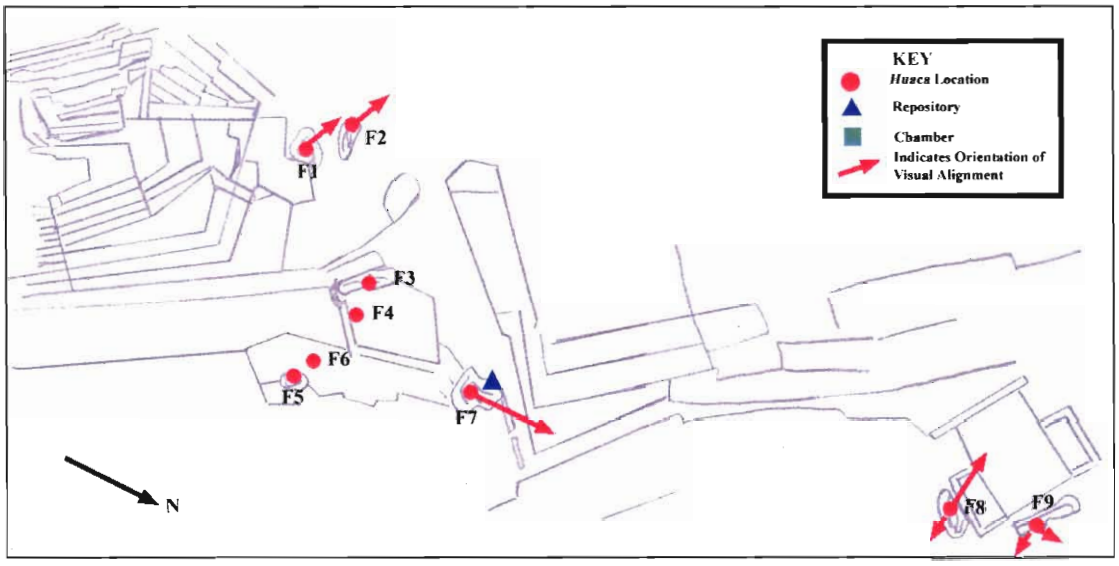
Map 5. Section C



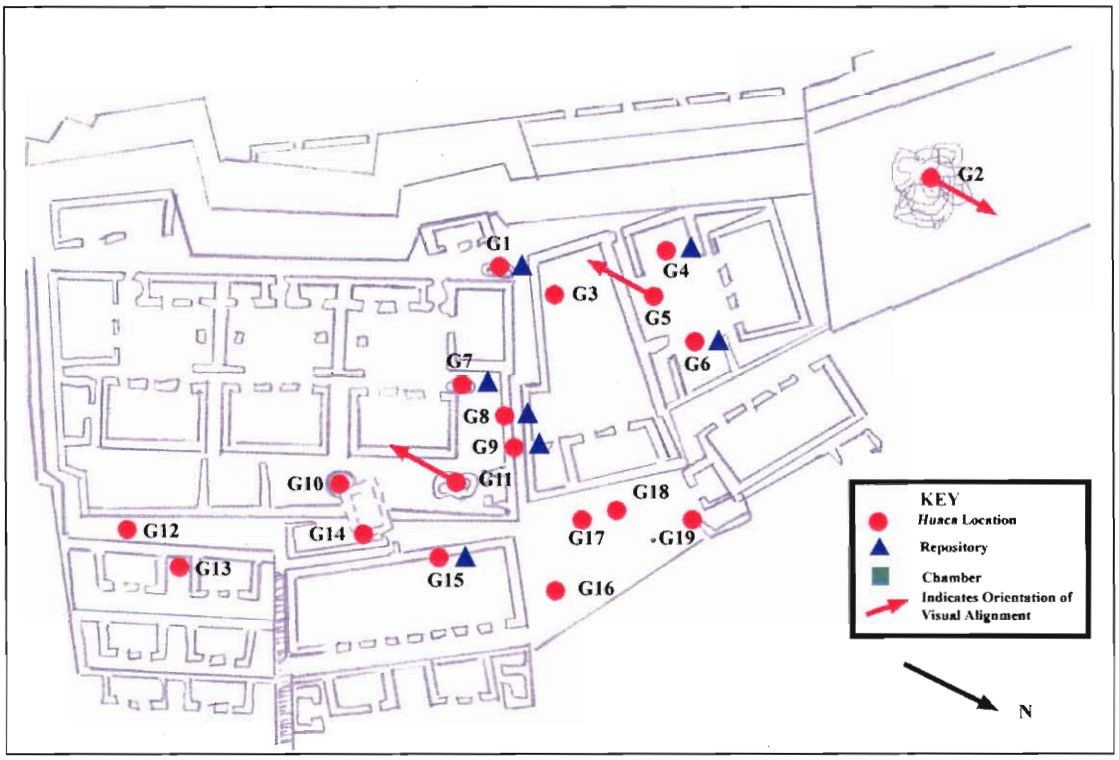
Map 6. Section D



Map 7. Section E



Map 8. Section F



Map 9. Section G.

Figures

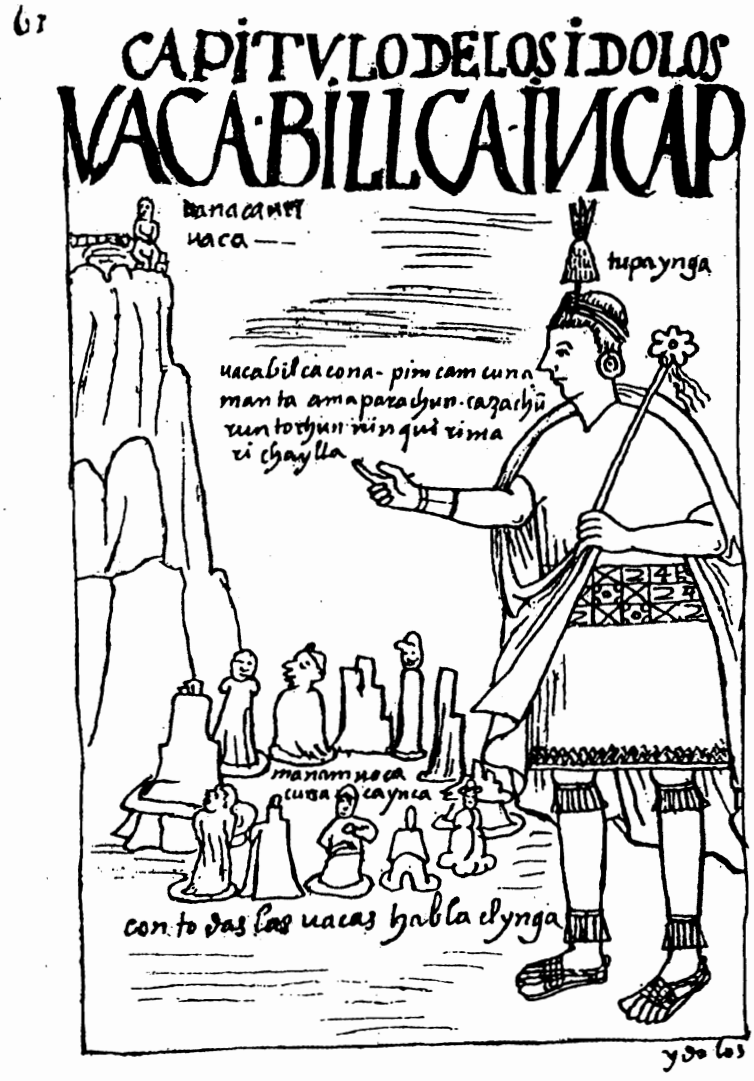


Figure 1. "Divinities of the Inka, Waqa Willka Inkap," from the Chapter of the Idols.

* The captions for figures 1-9 are directly taken from Felipe Guaman Poma de Ayala, El primer nueva corónica y buen gobierno and translated to English by Rolena Adorno.

Figure 2. "Idols of the Inkas: Inti, Uana Cauri, Tambo Toco, Pacari Tambo," from the Chapter of the Idols.

Figure 3. "Idols and Waqas of the Chinchaysuyus in Paria Caca, Pacha Kamaq, Creator of the Universe," from the Chapter of the Idols.

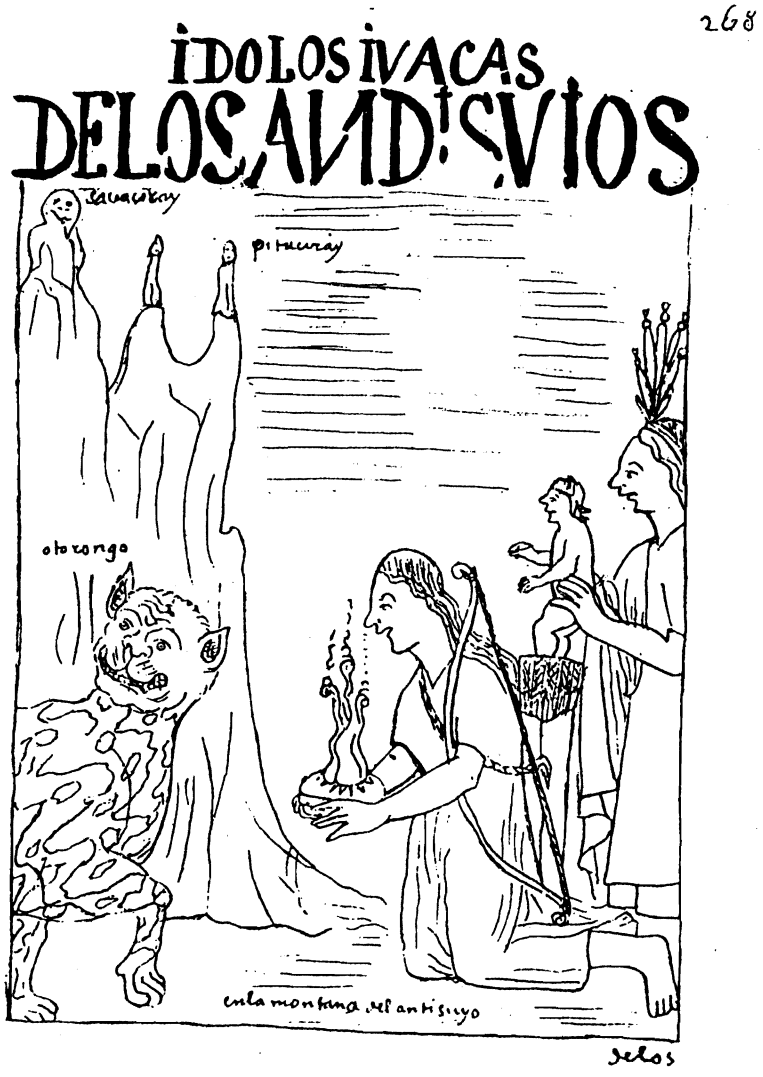


Figure 4. "Idols and Waqas of the Antisuyus, Saua Ciray, Pitu Ciray," from the Chapter of the Idols.

Figure 5. "Idols and Waqas of the Qullasuyus, Uillca Nota," from the Chapter of the Idols.

Figure 6. "Idols and Waqas of the Kuntisuyus, Coropona," from the Chapter of the Idols.

Figure 7. "The second month, February; Pawqar Waray Killa, month of donning precious loincloths," from the Chapter of the Months of the Year.

Figure 8. "The third month, March; Pacha Puquy Killa, month of the maturation of the soil," from the Chapter of the Months of the Year.

Figure 9. "Guaman Poma, 'the Author Ayala,' kneeling alongside the King of Spain, before the Pope," from the Title Page.

Figure 10. Machu Picchu, view towards the north showing Uña Huayna Picchu and Huayna Picchu rising above the estate.

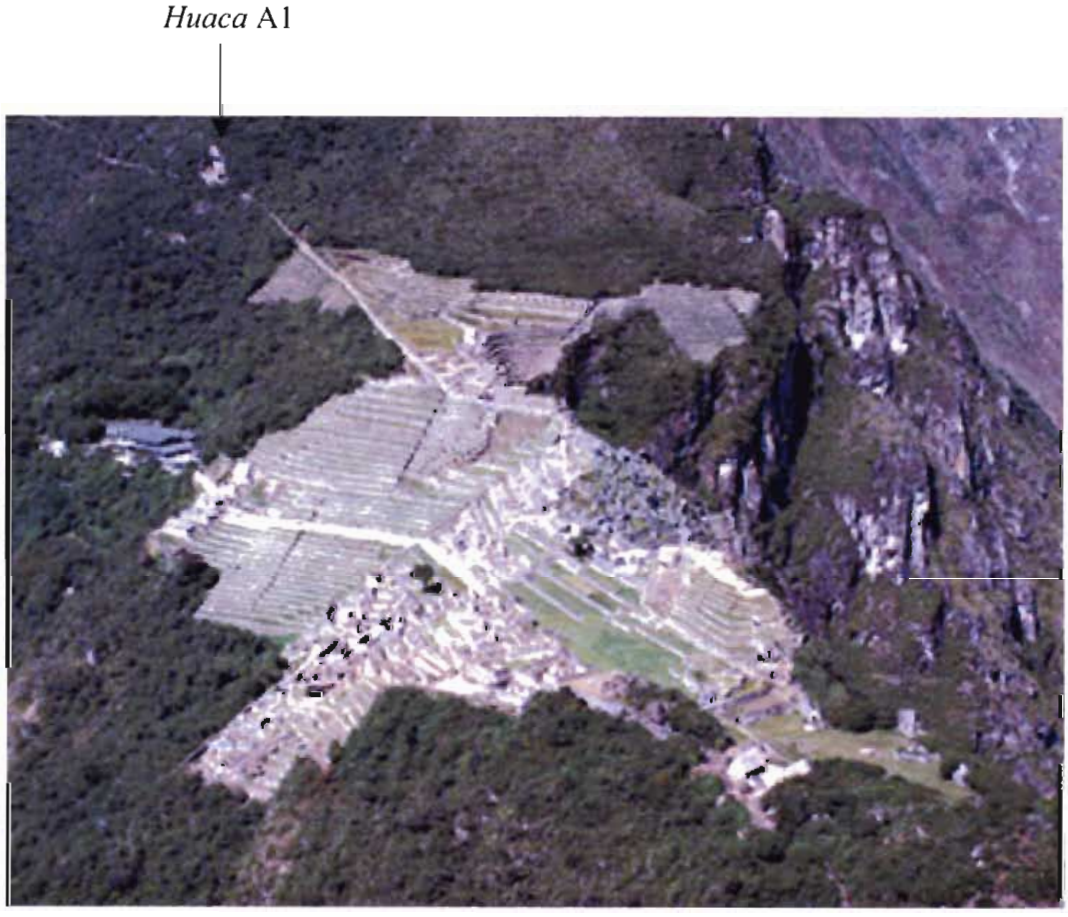


Figure 11. Machu Picchu, view towards the south from Huayna Picchu; *Huaca* A1 is located on the path leading to the *Intipunku*.

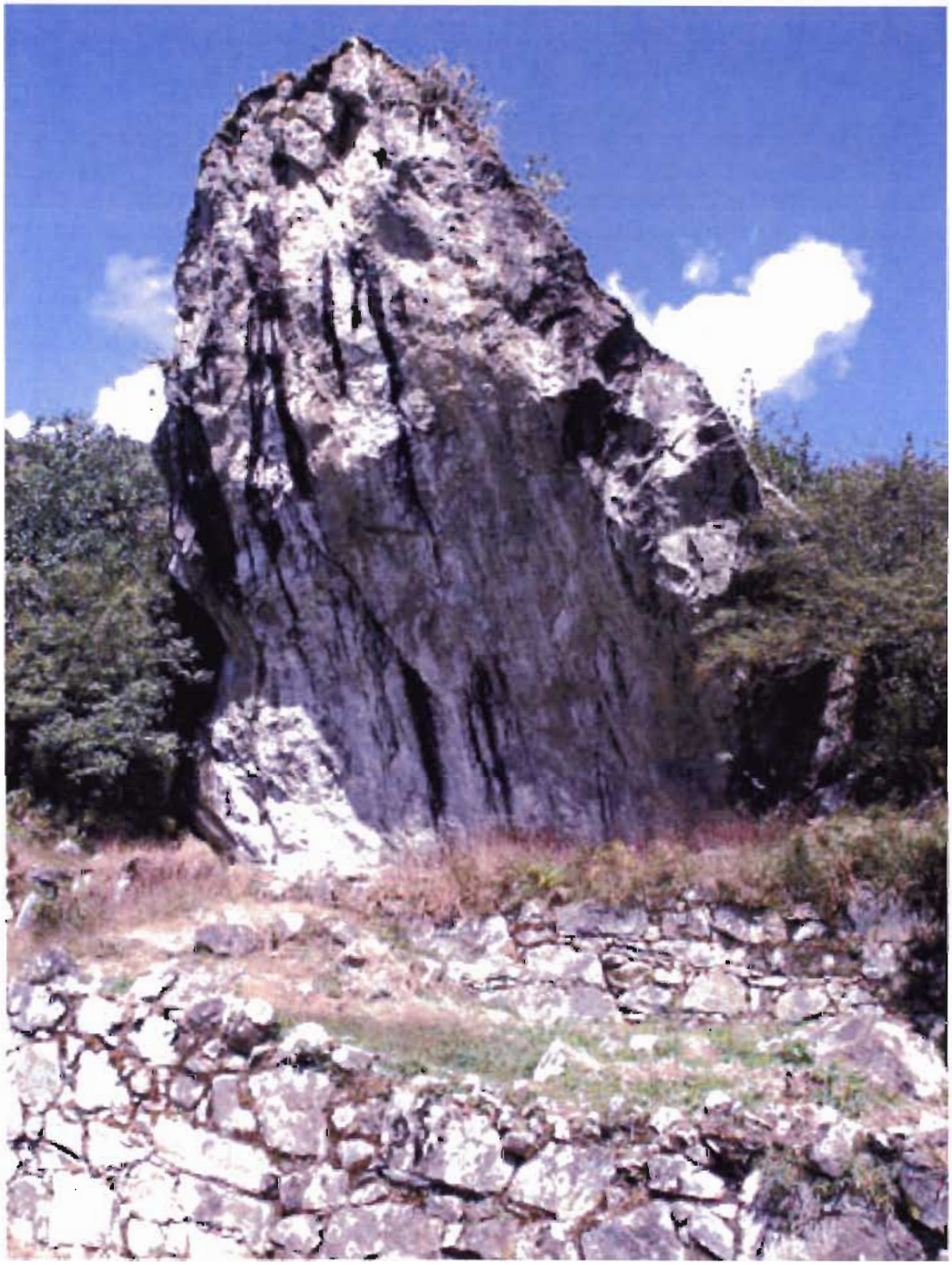


Figure 12. *Huaca* A1, eastern face, approx. 50' high.

Figure 13. *Huaca* A2, alignment with Yanantin to the east, approx. 3'6" high.

Figure 14. *Huaca* 2, viewing alignment illustrated in Figure 13 from kneeling position.

Figure15. *Huaca* A2, alignment with San Miguel to the northwest.

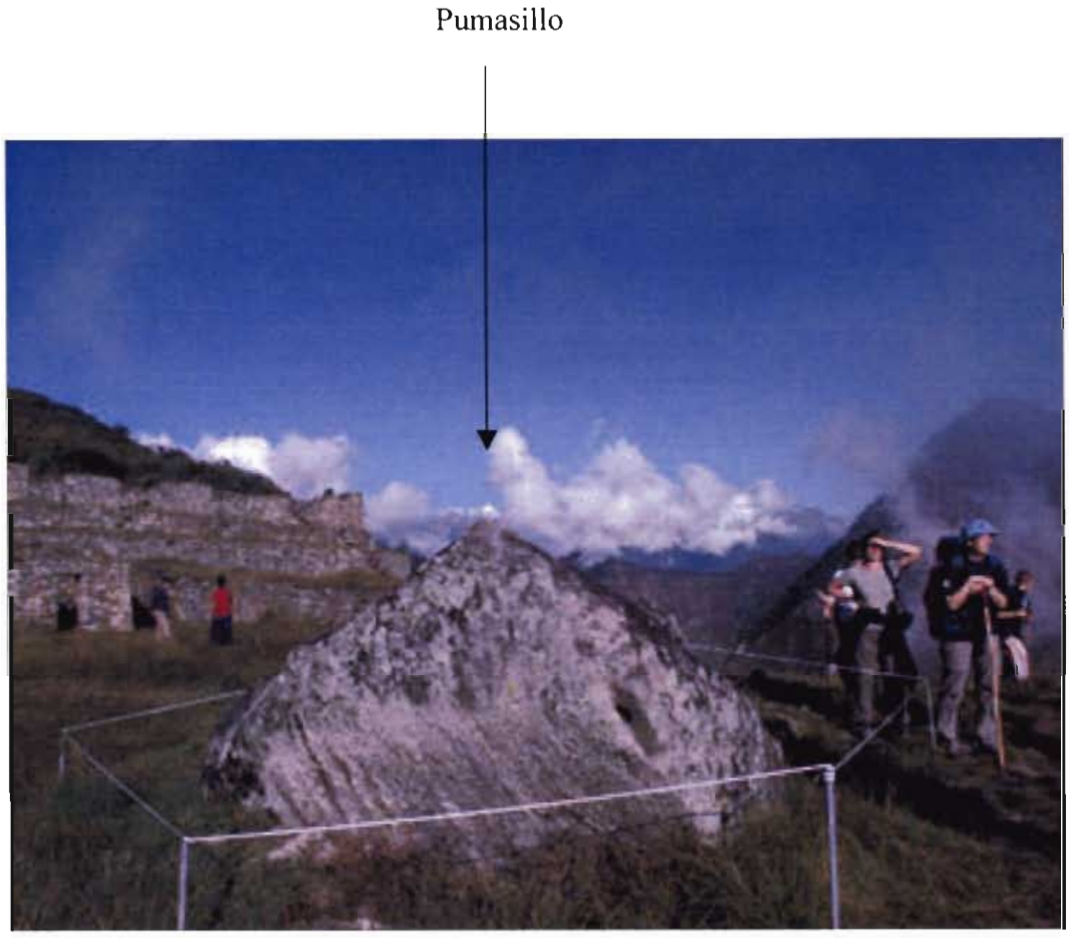


Figure 16. *Huaca* A2, alignment with Pumasillo to the west.

Figure 17. *Huaca* A2, carvings on the northern face of the stone.

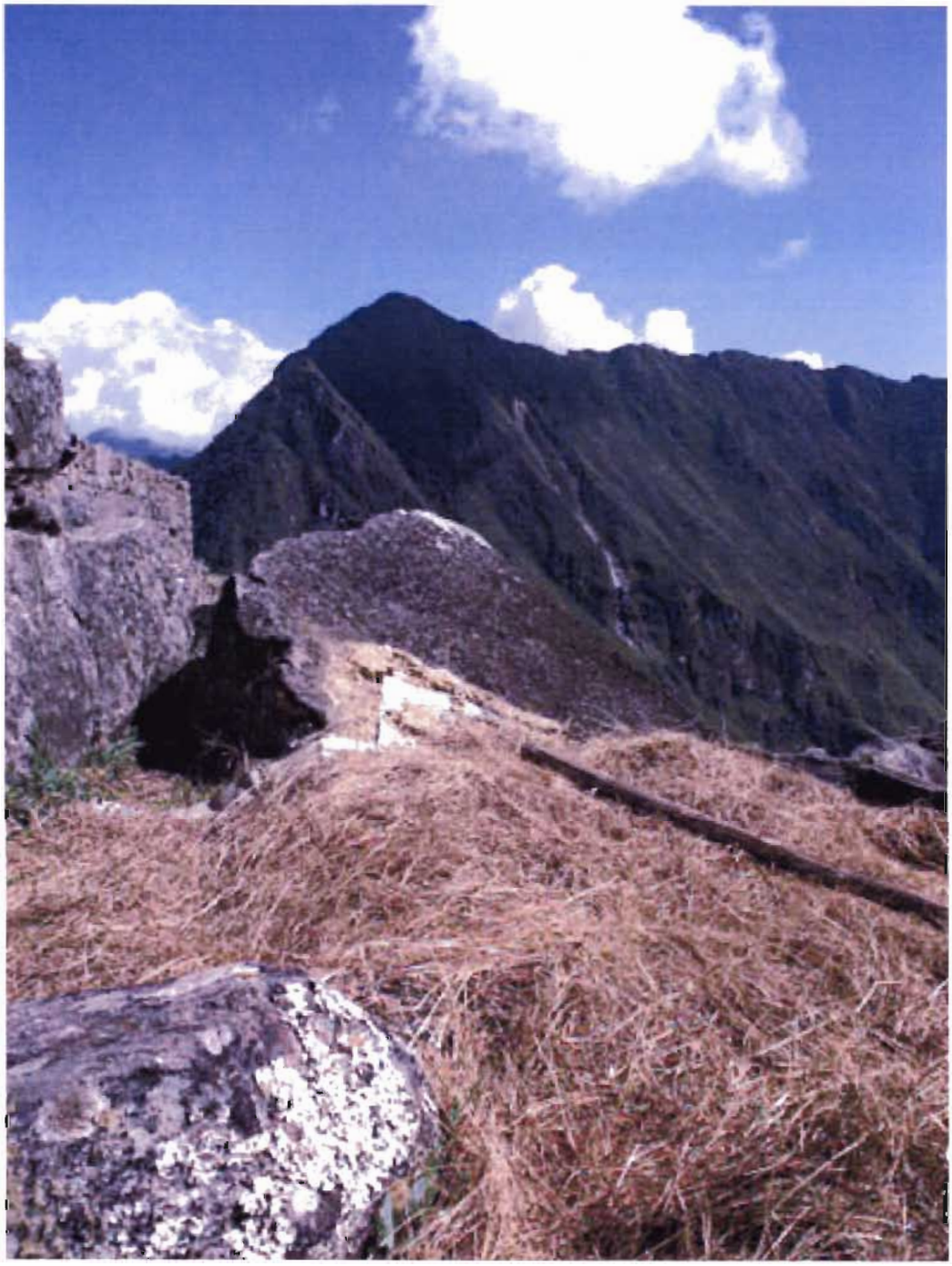


Figure 18. *Huaca* A3, pinnacle of stone, alignment with San Miguel to the northwest.

Figure19. *Huaca* A3, partial overhang created by lower part of the stone, approx. 8'6" high.

Figure20. *Huaca* A4, southern face, approx. 8' high.

Figure 21. *Huaca* A5, alignment with San Gabriel to the southeast, approx. 6'6" high.

Figure 22. *Huaca* A6, southern face, approx. 2'3" high.

Figure 23. *Huaca* A7, eastern face, approx. 11' high.

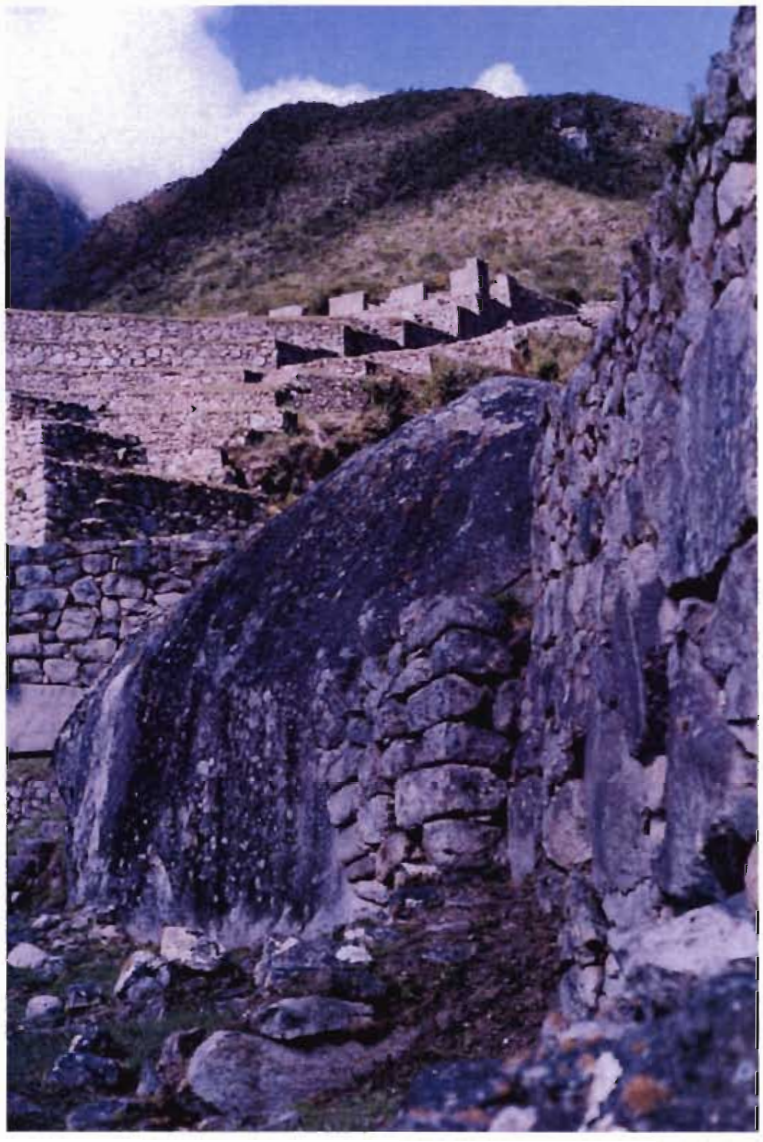


Figure 24. *Huaca* B1, alignment with Machu Picchu mountain to the southeast, approx. 30' high.

Figure 25. *Huaca* B2, eastern face, approx. 30' high.

Figure 26. *Huaca* B3, southern face, approx. 10" high.

Figure 27. *Huaca* B3, northern face.

Figure 28. *Huaca* B4, alignment with Uña Huayna Picchu to the north, approx. 3'6" high.

Figure 29. *Huaca* B4, seated position to view alignment with Uña Huayna Picchu.

Figure 30. *Huaca* B5, southern face, approx. 1' high.

Figure 31. Alignment of *Huaca* B4 and San Miguel from *Huaca* B5.

Figure 32. *Huaca* B6, eastern face, overhang (B6a) is approx. 5' high and carved stone (B6b) is approx. 3' high.

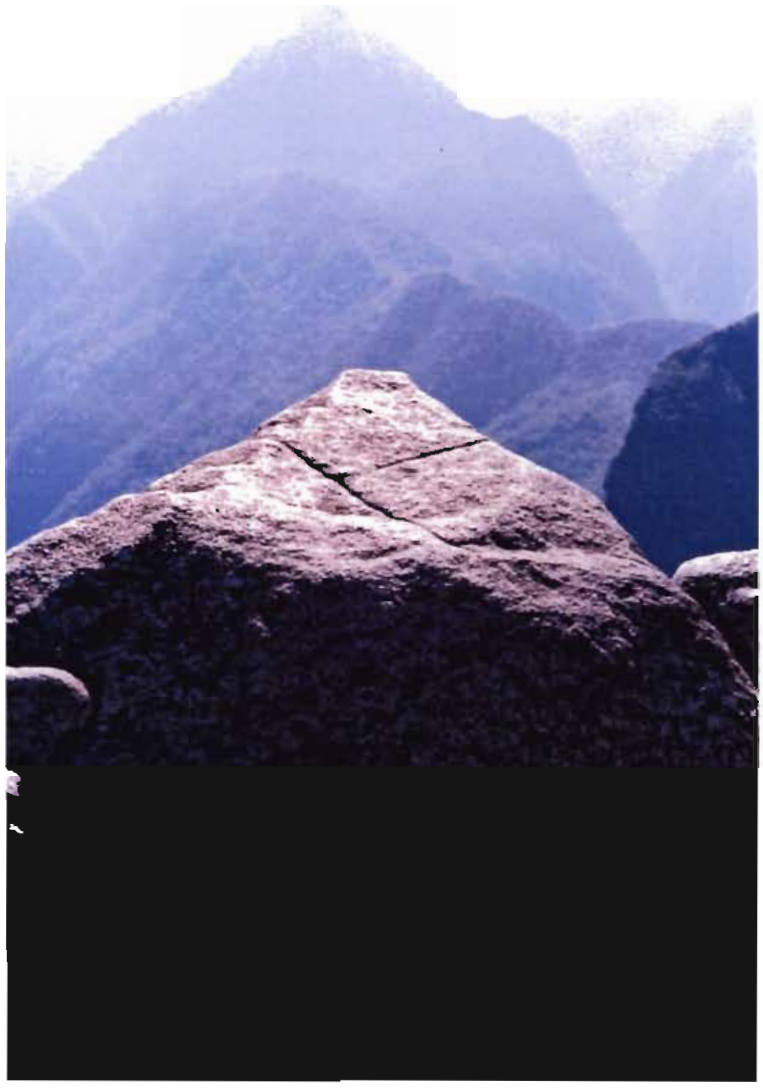


Figure 33. *Huaca* B7, alignment with Yanantin to the northeast, approx. 3'2" high.

Figure 34. *Huaca* B7, seated position to view alignment illustrated in Figure 33.

Figure 35. *Huaca* B8, southern face, approx. 2'6" high.

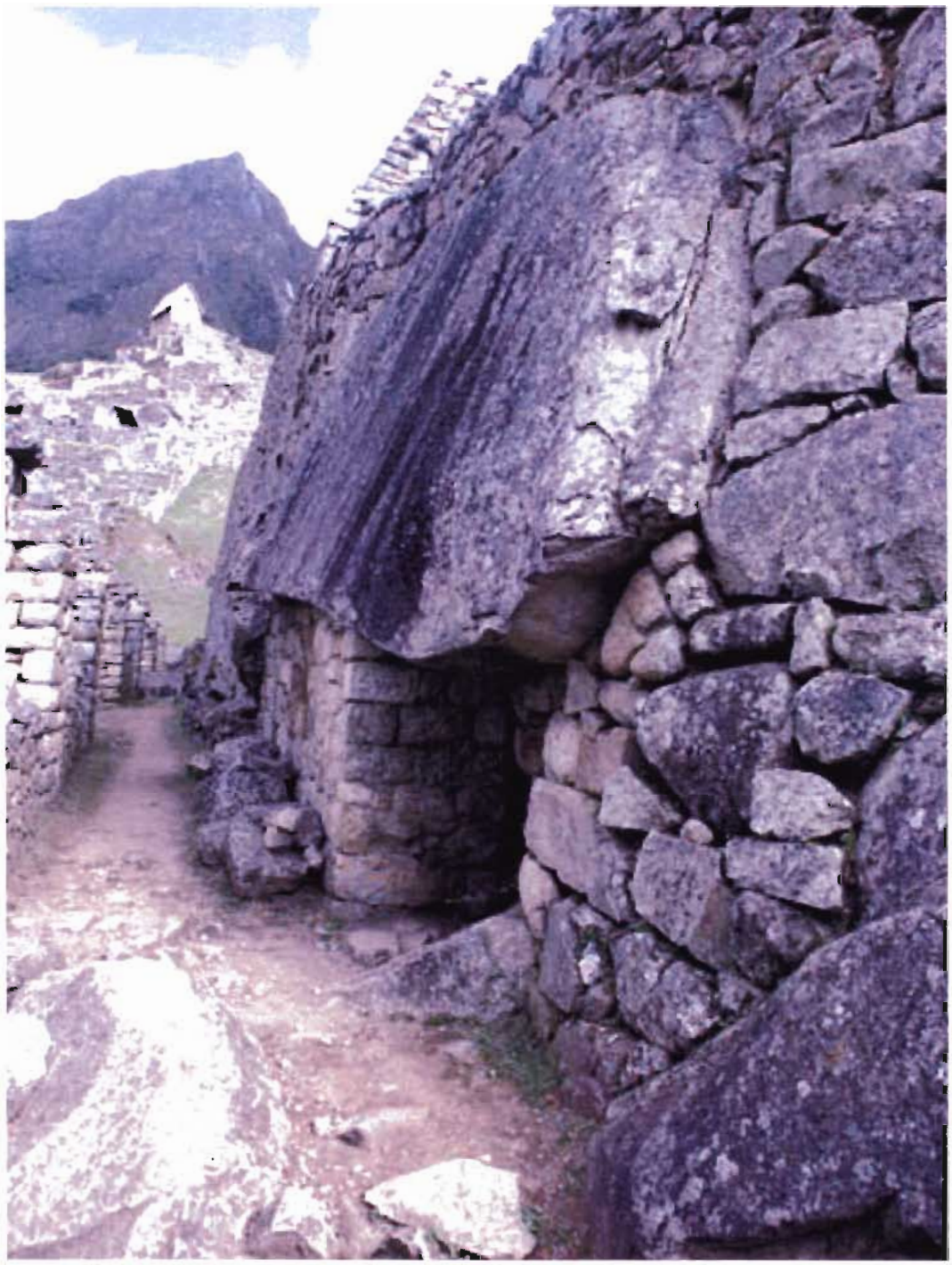


Figure 36. *Huaca* B9, view towards the south at eastern face of stone, approx. 4'6" in height.

Figure 37. *Huaca* B9, eastern face.

Figure 38. *Huaca* B9, interior view of space beneath the overhang.

Figure 39. *Huaca* B10, northern face, approx. 7' high.

Figure 40. *Huaca* B11, channel carved across top of stone, approx. 2'9" high.

Figure 41. *Huaca* B11, view towards the north.

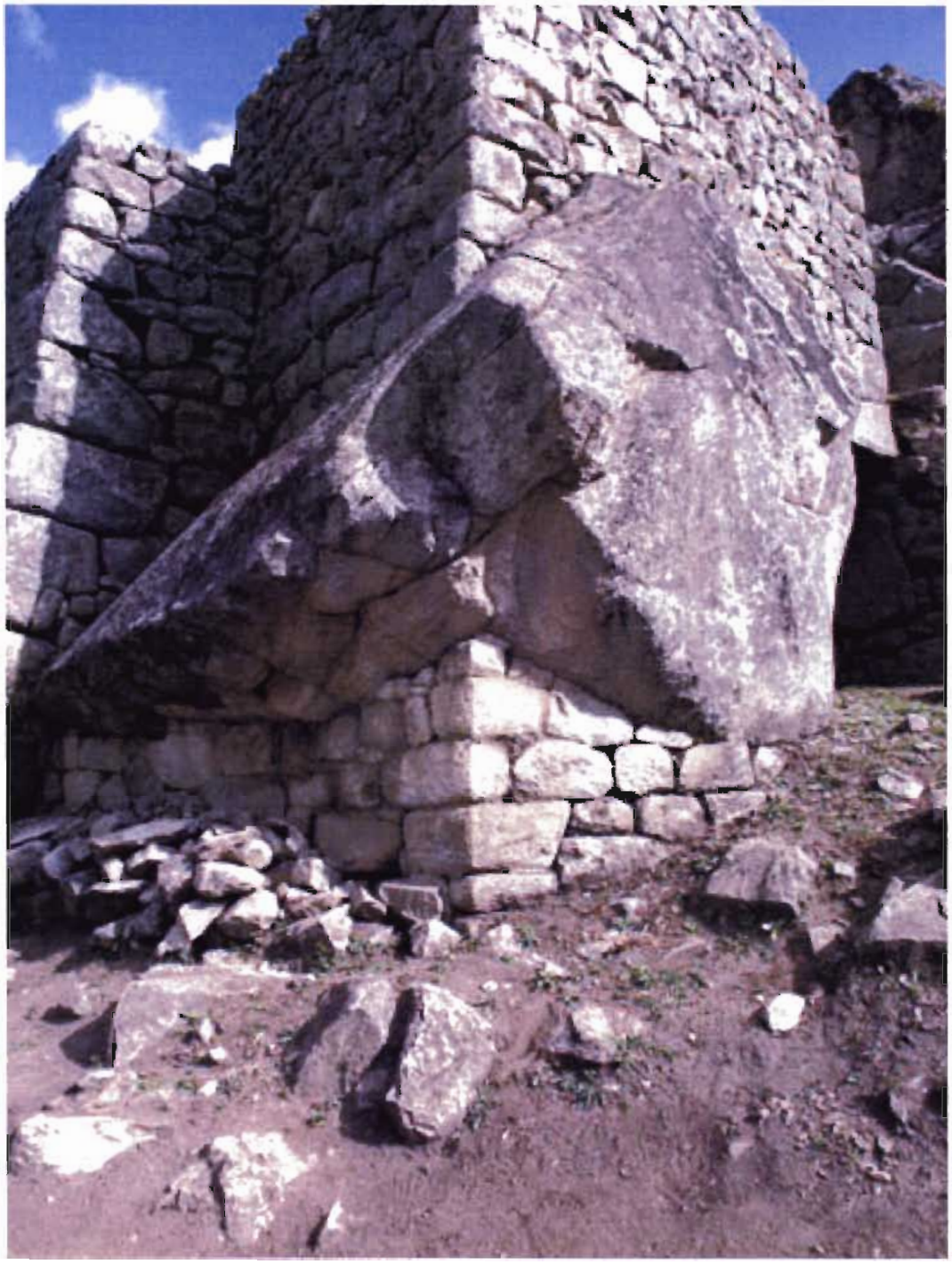


Figure 42. *Huaca* B12, northeastern face, approx. 11' high.

Figure 43. *Huaca* B13, eastern face, approx. 2'6" high.

Figure 44. *Huaca* B14, southern face, approx. 6' from ground level, 3'6" in height.

Figure 45. *Huacas* B15 (photo center) and B16 (foreground); B15 is approx. 8" high and B16 is approx. 1' high.

Figure 46. *Huaca* B17, view from above, approx. 1'9" high.

Figure 47. *Huaca* B18, carved stone in background is approx. 2' 8" high, carved stone in foreground is approx. 6' high.

Figure 48. Interior of *Huaca* B18 view towards Machu Picchu.

Figure 49. *Huaca* B18, detail.

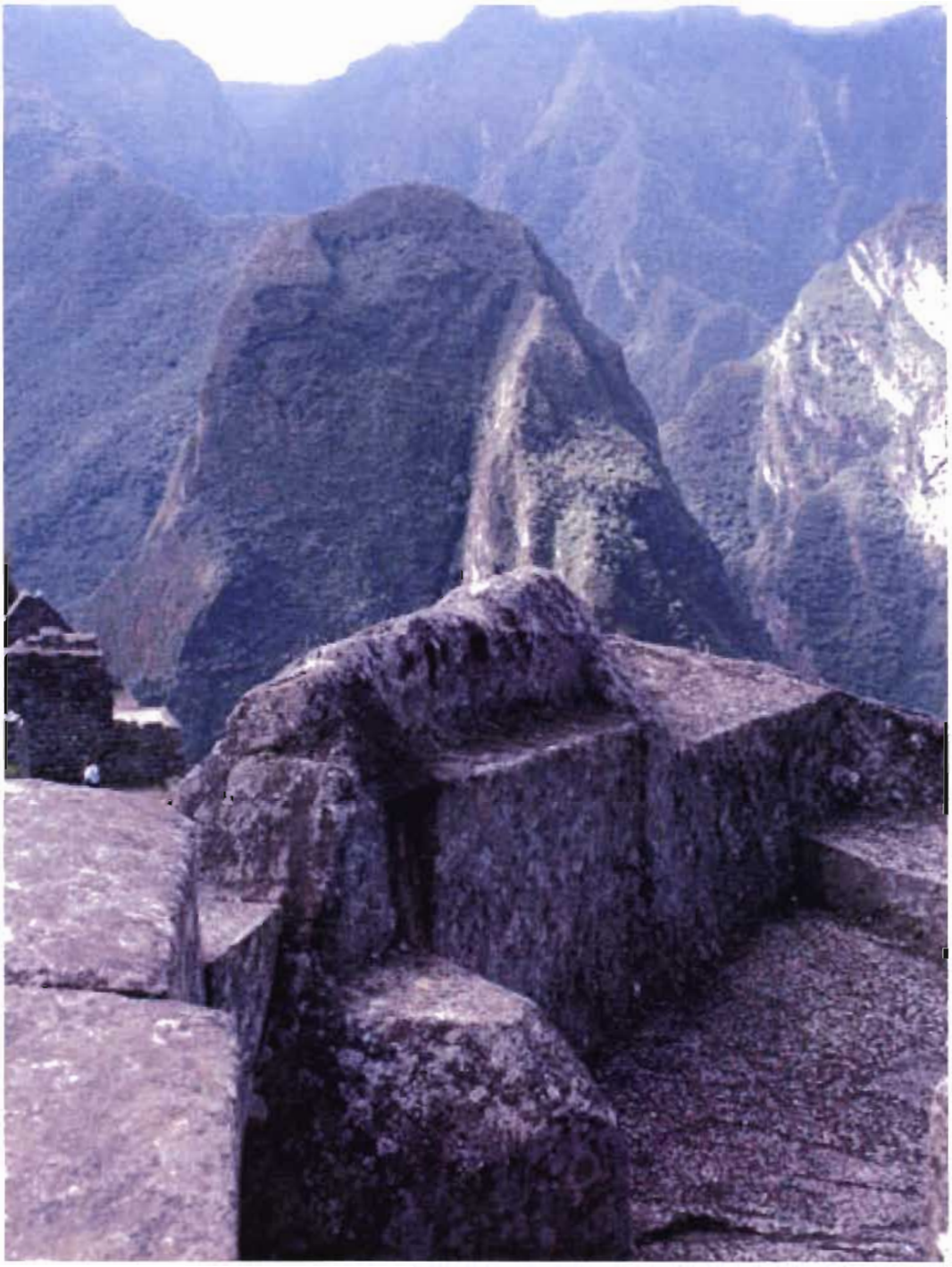


Figure 50. *Huaca* B19, eastern face.

Figure 51. *Huaca* B19, alignment with Putucusi.

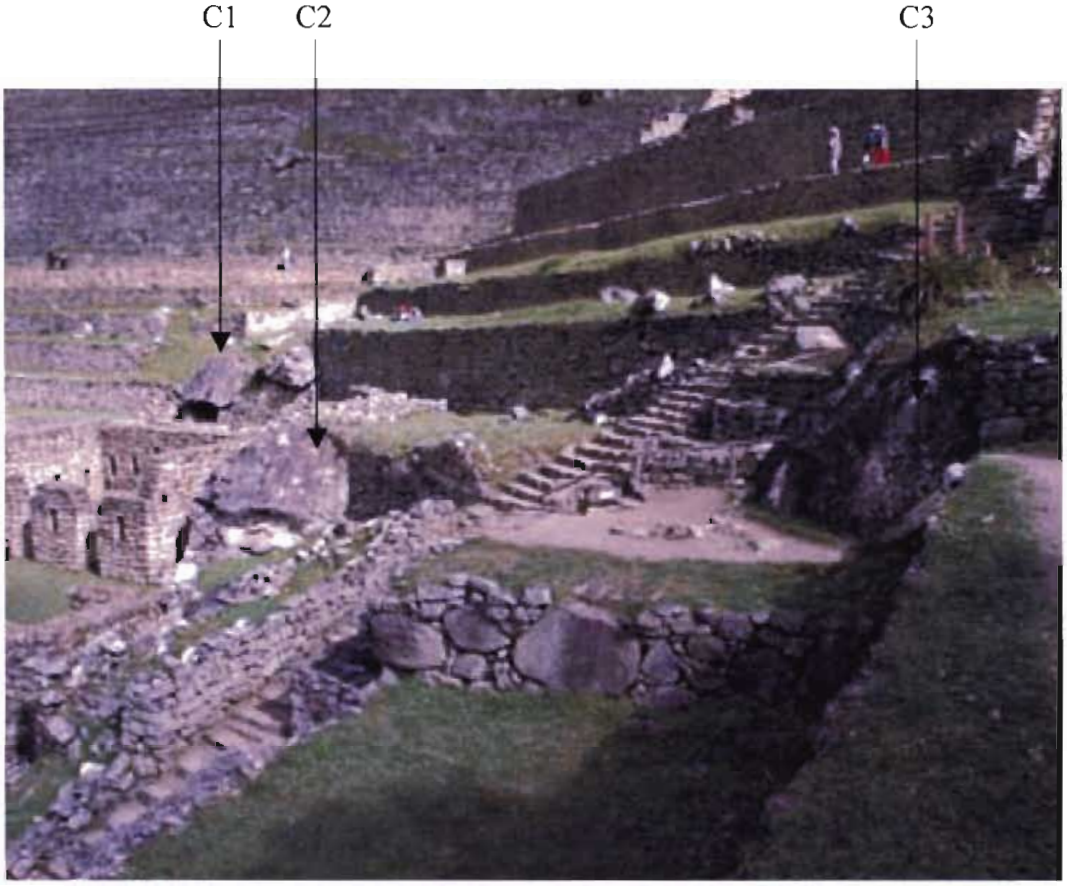


Figure 52. *Huacas* C1, C2, andC3.

Figure 53. *Huaca* C1, eastern face, approx. 6' in height.

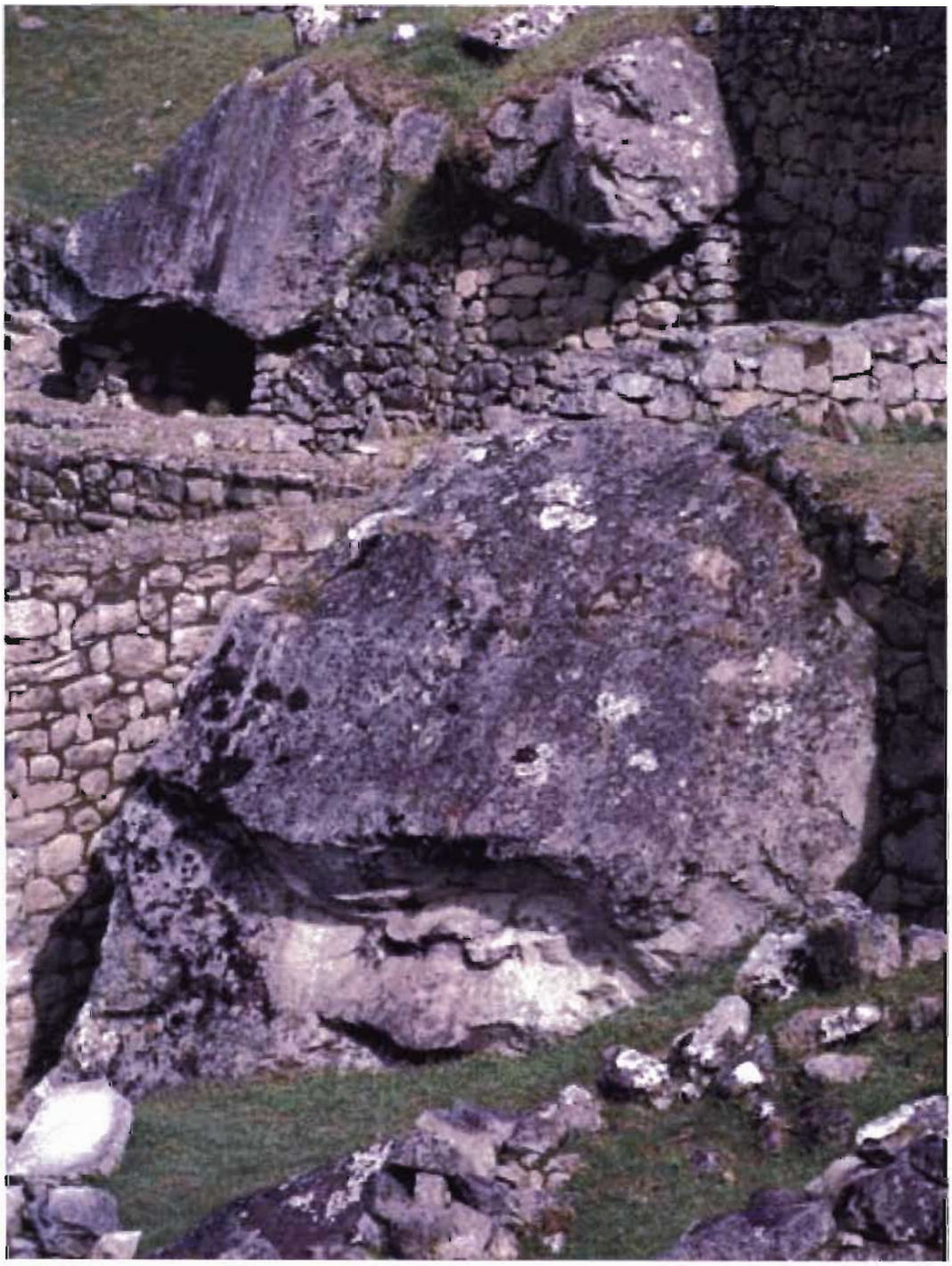


Figure 54. *Huaca* C2, eastern face, approx. 6' high.

Figure 55. *Huaca* C3, eastern face, approx. 7'6" high.

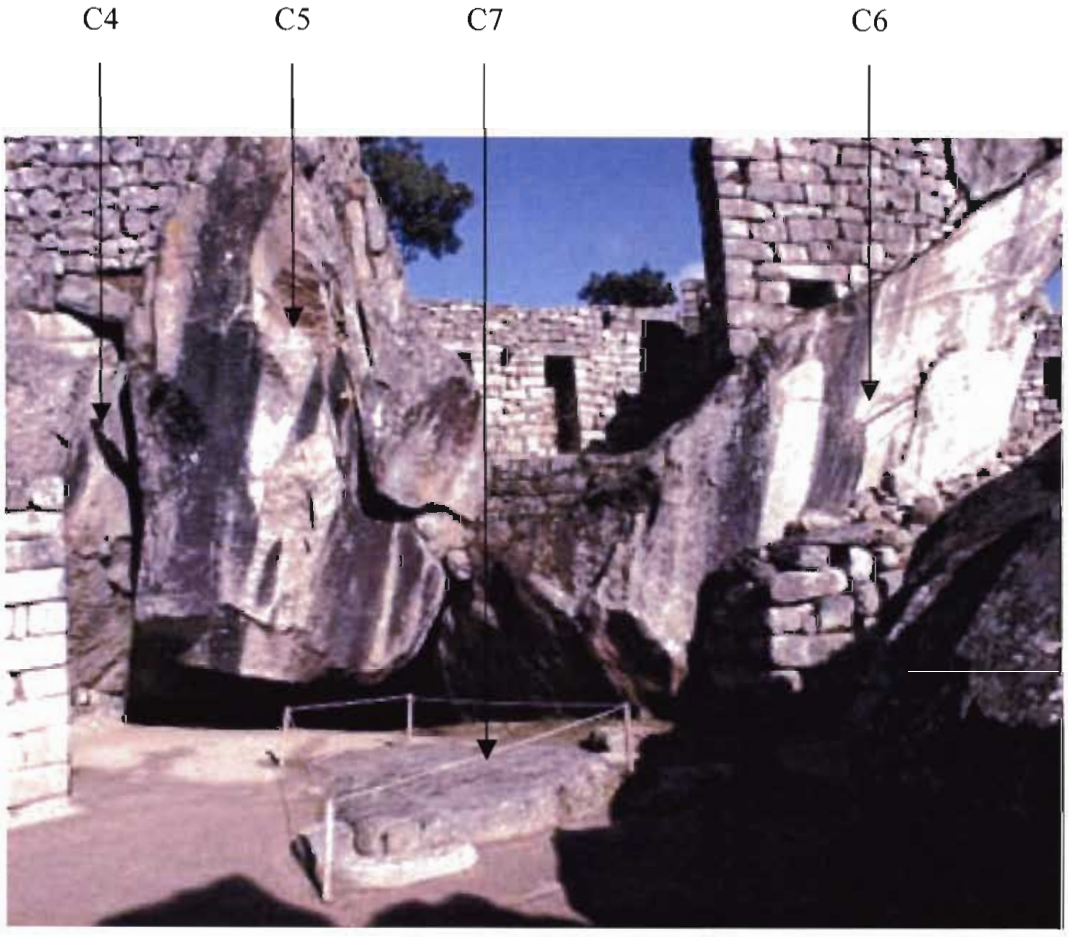


Figure 56. *Huacas* C4 – C7, commonly known as the "Condor Group," eastern face of stones.

Figure 57. *Huaca* C4, interior detail

Figure 58. *Huaca* C4, interior detail, niche (left) is approx. 48" high. The repository (right) is directly adjacent to the niche.

Figure 59. *Huaca* C7, approx. 5" high.

Figure 60. *Huaca* C8, western face, approx. 9' high.

Figure 61. *Huaca* C9, northeastern face, approx. 30' high.

Figure 62. *Huaca* C10, eastern face, approx. 3'at highest point.

Figure 63. *Huaca* C11, eastern face, approx. 20' high.

Figure 64. *Huaca* C11, commonly known as the "Sliding Stone."

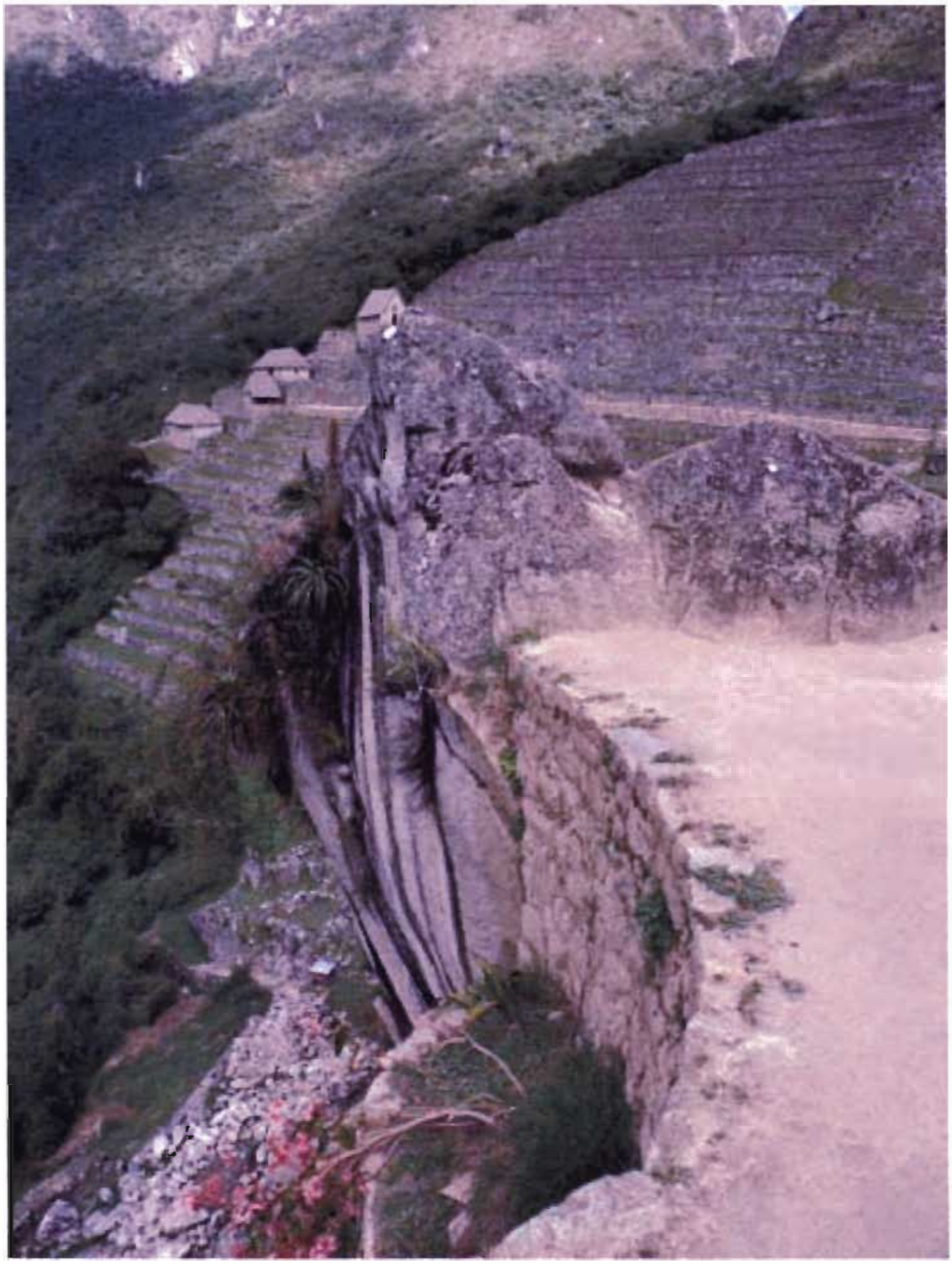


Figure 65. *Huaca* C11, western face of the stone.

Figure 66. *Huaca* C11, sculpted pinnacle of the stone.

Figure 67. *Huaca* C11, standing position for alignment with Yanantin to the northeast.

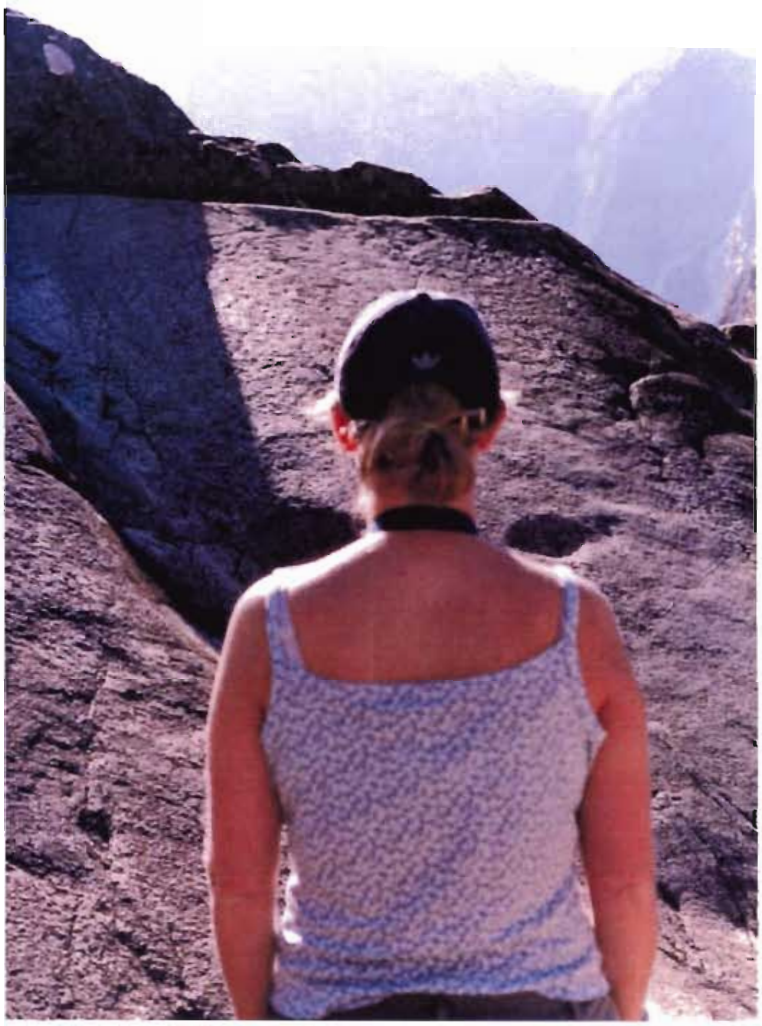


Figure 68. *Huaca* C11, standing position for alignment with San Gabriel to the east.

Figure 69. *Huaca* C11, alignment with San Gabriel.

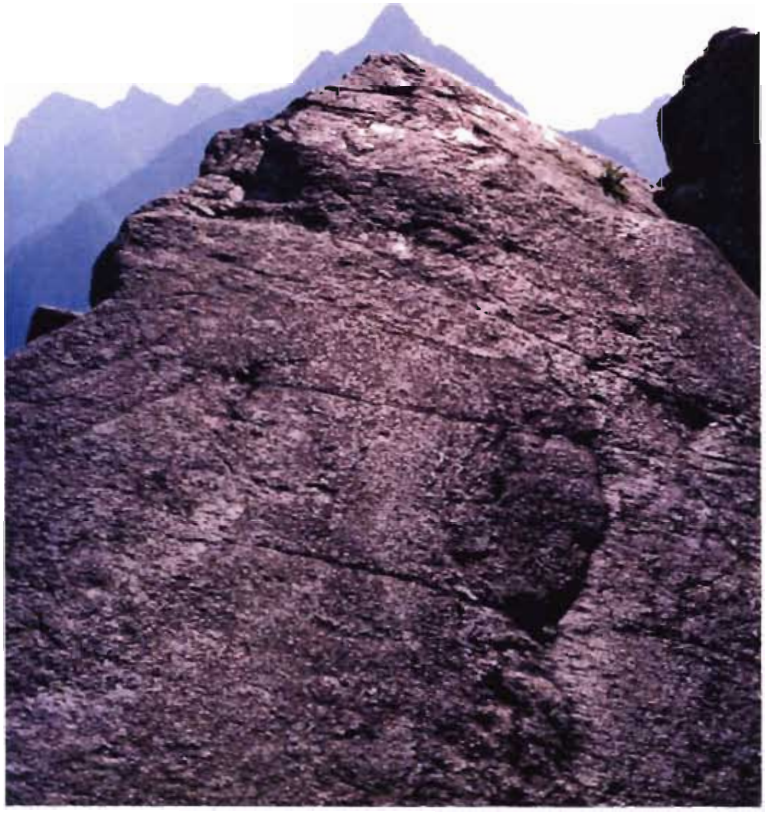


Figure 70. *Huaca* C11, second alignment with Yanantin to the northeast.

Figure 71. *Huaca* C11, alignment with Huayna Picchu to the north.

Figure 72. *Huaca* C11, kneeling position to view alignment with San Gabriel (cf. Fig. 73).

Figure 73. *Huaca* C11, alignment with San Gabriel to the east.

Figure 74. *Huaca* C12, southern face, approx. 3'9" high.

Figure 75. *Huaca* C12, eastern face of the stone.

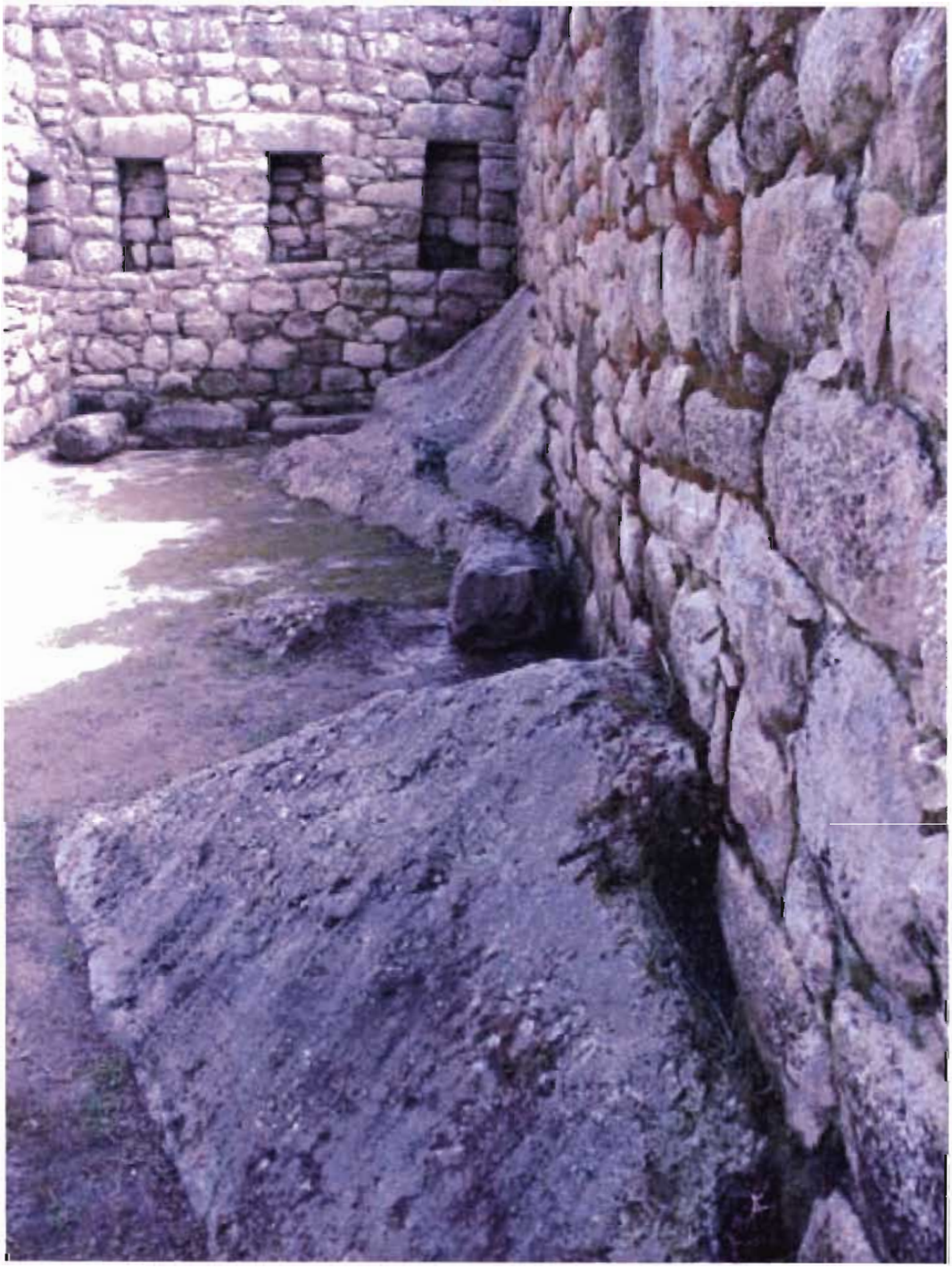


Figure 76. *Huaca* C13, photo foreground.

Figure 77. *Huaca* C13, southwestern face, approx. 2' high.

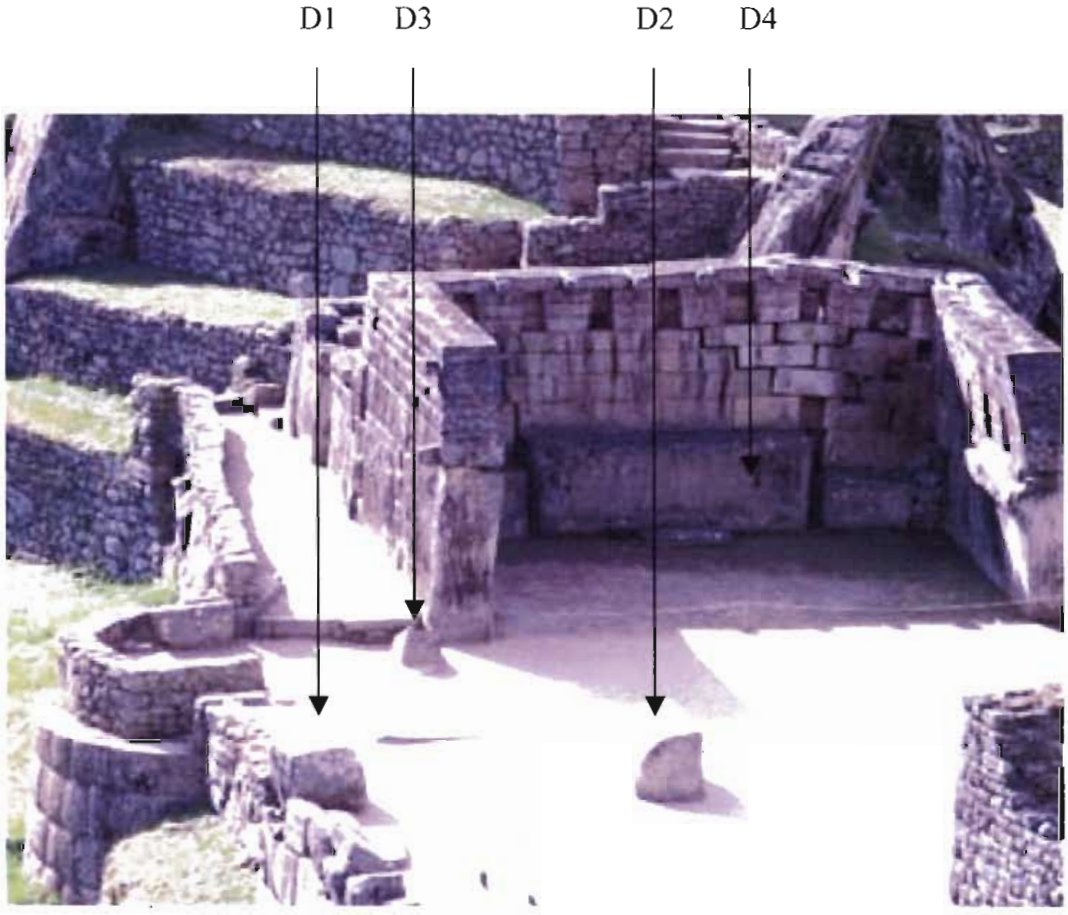


Figure 78. *Huacas* D1 - D4 in the "Sacred Plaza."

Figure 79. *Huacas* D1 (2' high) and D2 (2'6" high), eastern face of the stones.

Figure 80. *Huaca* D3, eastern face, approx. 1'4" high.

Figure 81. *Huaca* D5, eastern face, approx. 2' high.

Figure 82. *Huaca* D5, western face of the stone.

Figure 83. *Huaca* D6, also known as the "Andean Cross," western face, approx. 2' 6" high.

Figure 84. "Andean Cross" at the site of Pisac.

Figure 85. *Huaca* D7, eastern face, approx. 25' high.

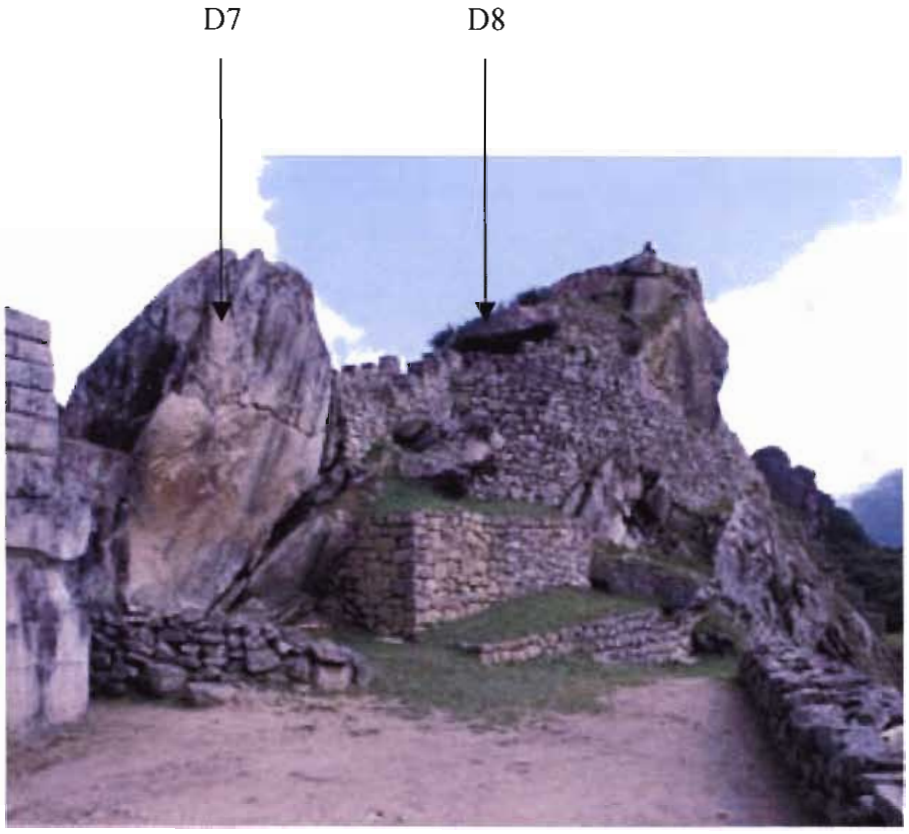


Figure 86. *Huacas* D7 and D8.

Figure 87. *Huaca* D8, southern face, approx. 4'5" high.

Figure 88. *Huaca* D9, southern face, approx. 15' high.

Figure 89. *Huaca* D10, also known as the *Intihuatana*, southern face, approx. 7' high.

Figure 90. *Huaca* D10, alignment with Huayna Picchu.

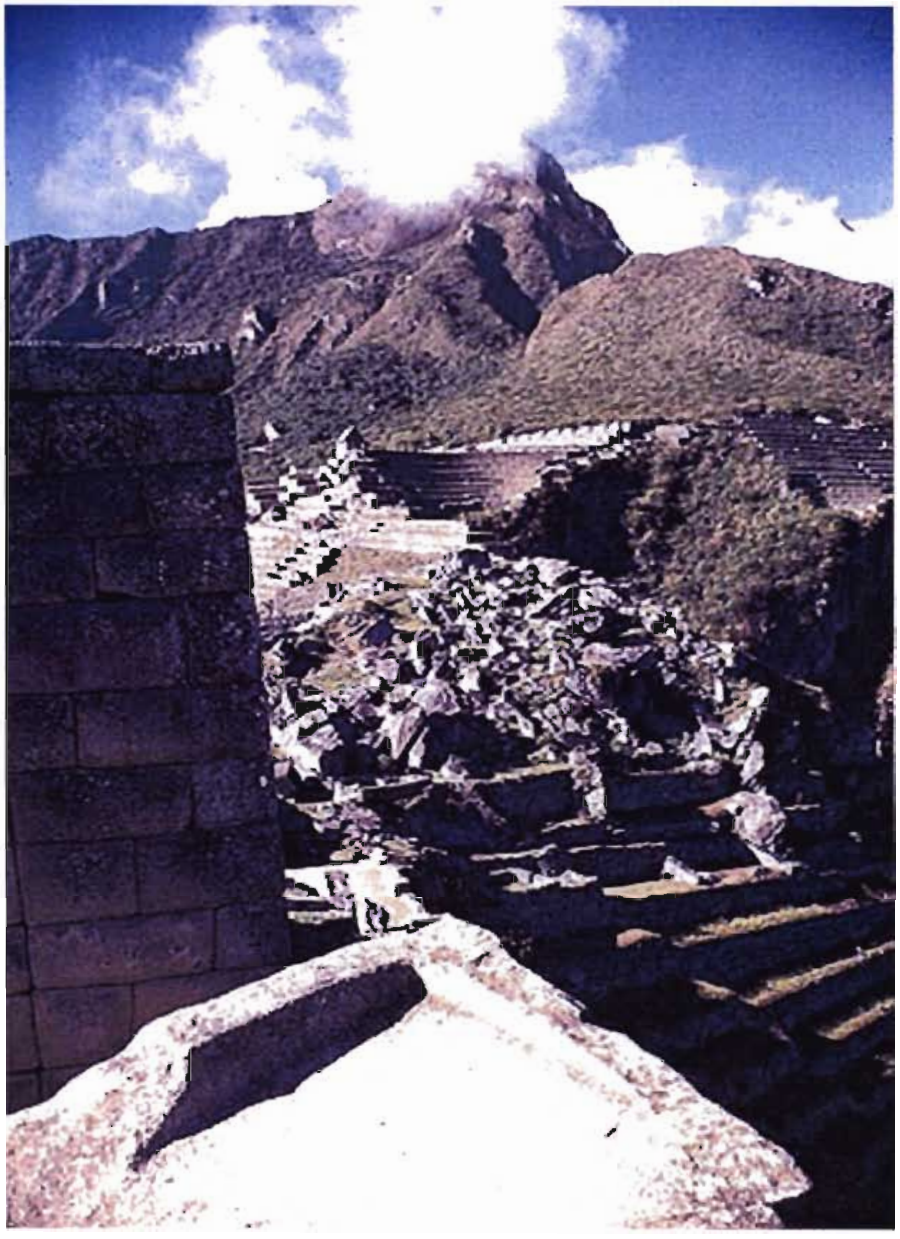


Figure 91. *Huaca* D11, stone is carved to point towards Machu Picchu Mountain to the south.

Figure 92. *Huaca* D11, located south of *Huaca* D10.

Figure 93. *Huaca* D11, detail.

Figure 94. *Huaca* D12, alignment with Yanantin to the northeast, approx. 6' high.

Figure 95. *Huaca* D12, northern face of the stone.

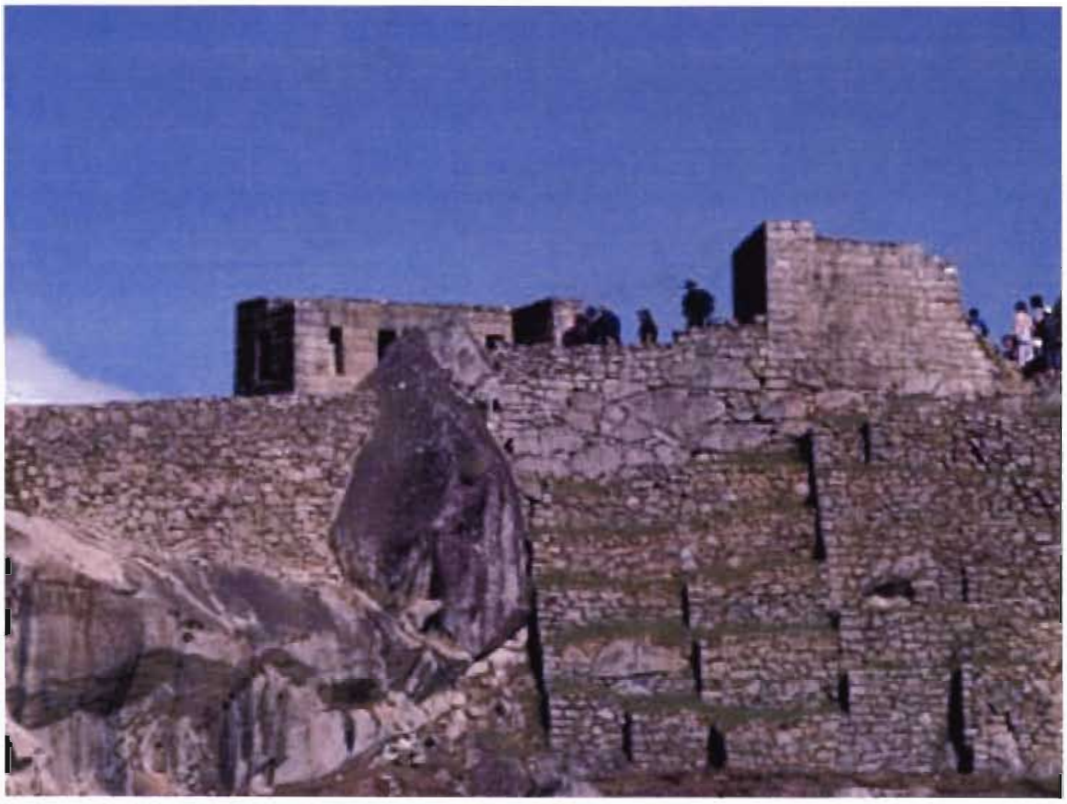


Figure 96. *Huaca* D12, eastern face of the stone.

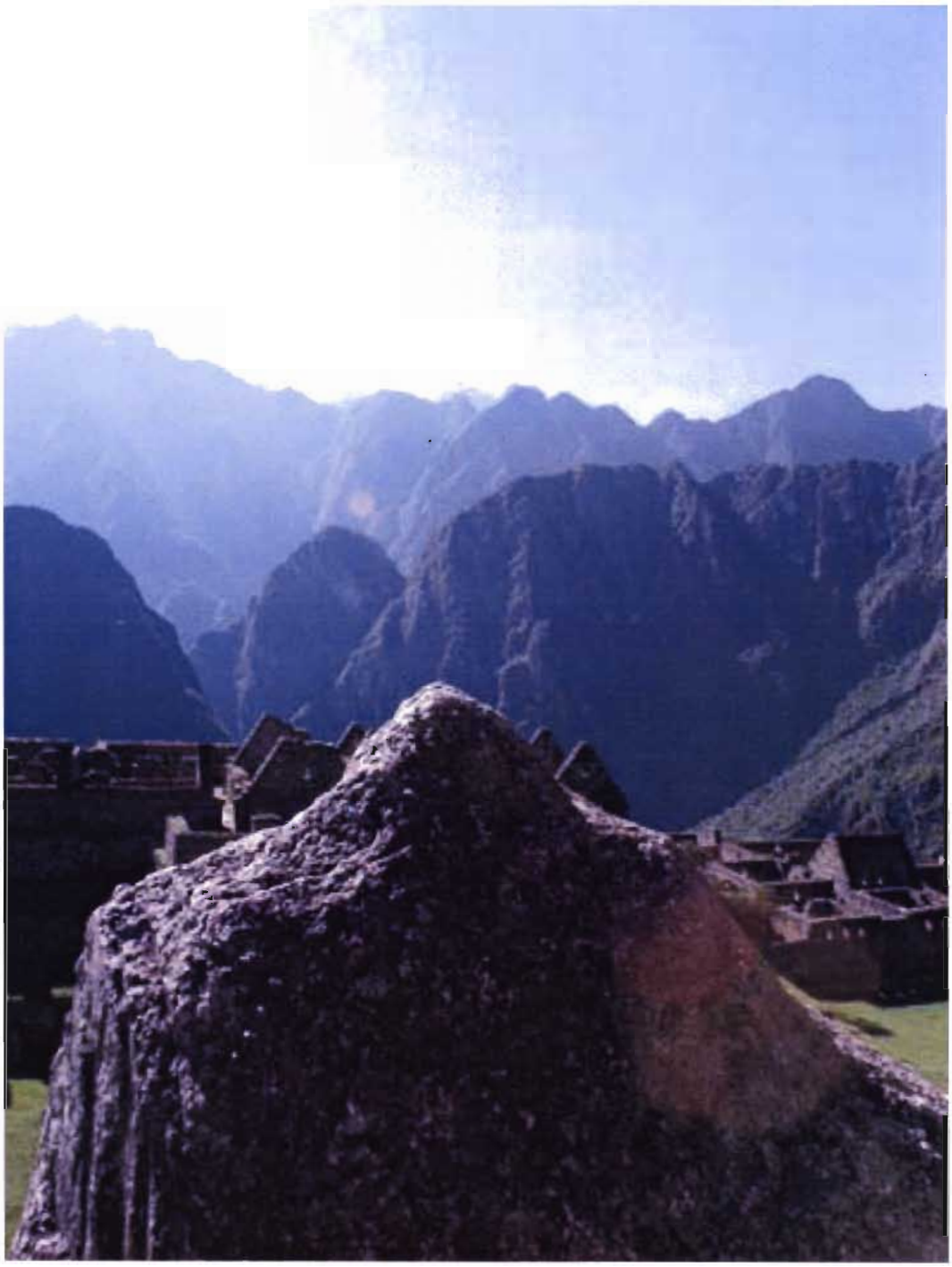


Figure 97. *Huaca* D13, eastern face, approx. 3' high.

Figure 98. View of Veronica from kneeling position west of *Huaca* D13.

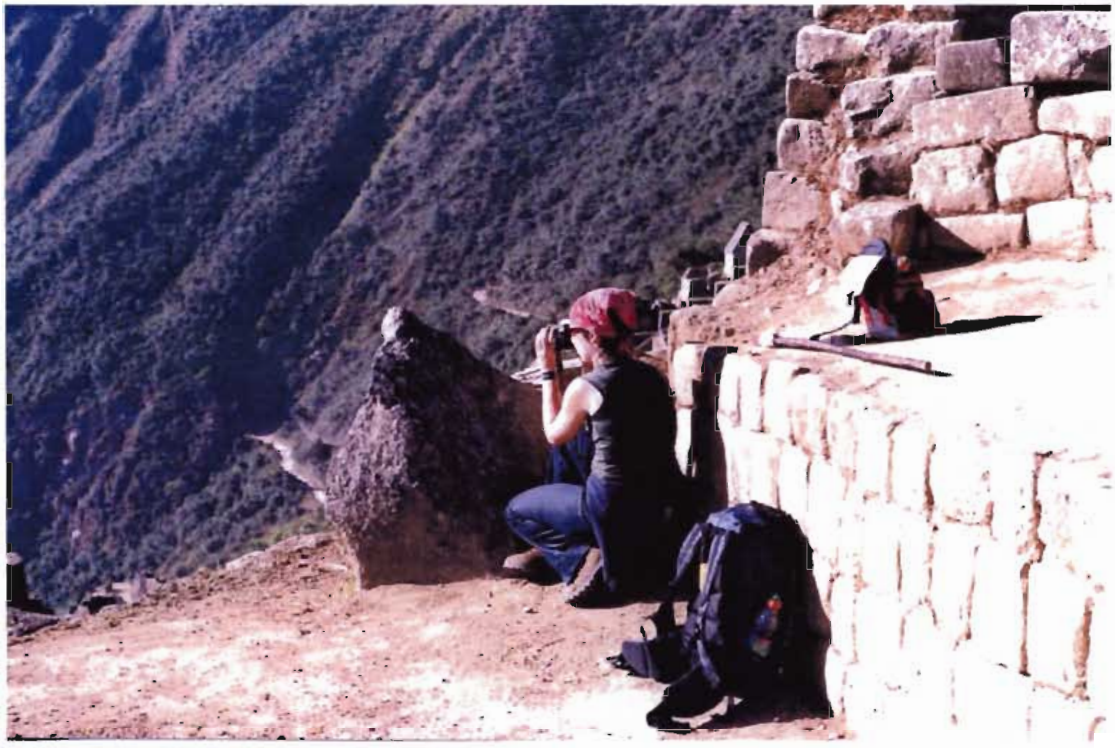


Figure 99. *Huaca* D13, kneeling position to view alignment with Veronica.

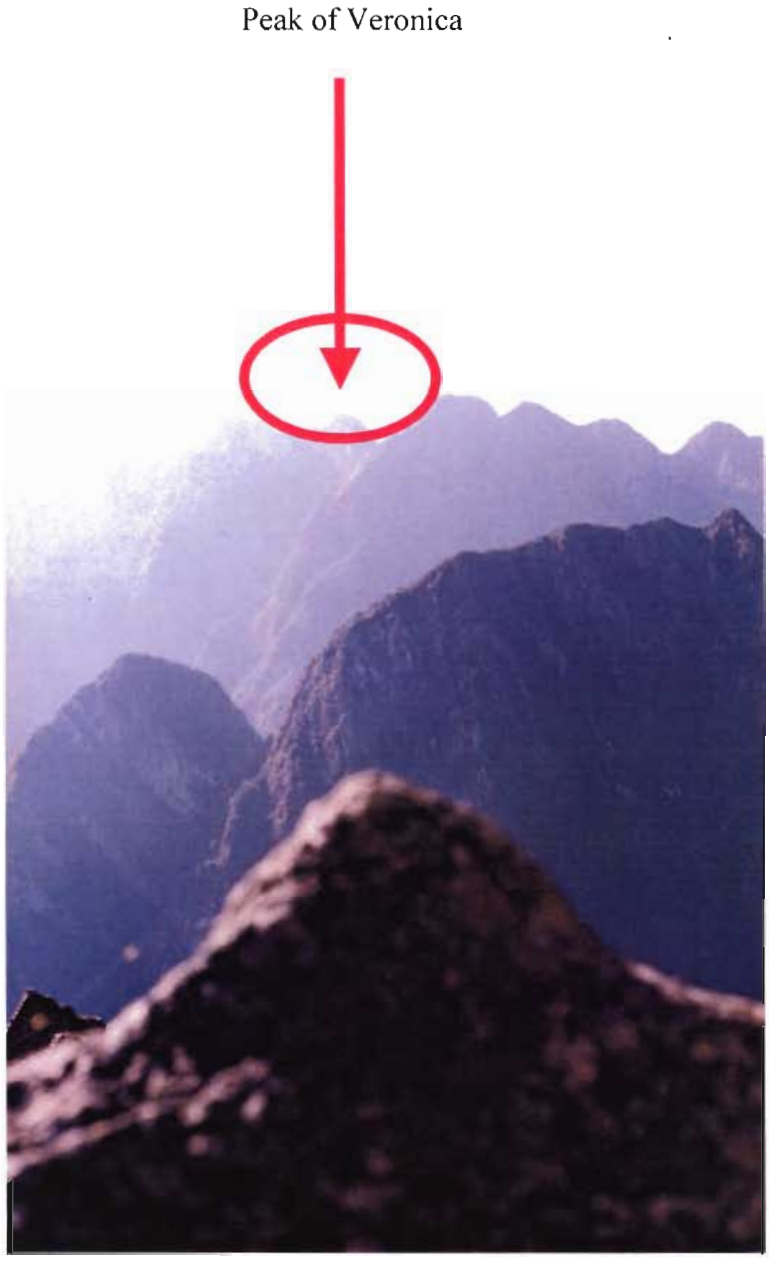


Figure 100. *Huaca* D13, alignment with Veronica (cf. Fig. 97).

Figure 101. View of Section D.

Figure 102. *Huaca* D14, eastern face, approx. 7' high.

Figure 103. *Huaca* E1, northern face, approx. 8'5/8" high.

Figure 104. *Huaca* E1, alignment with Machu Picchu mountain.

Figure 105. *Huaca* E1, seated position, 7' from stone, to view alignment with Machu Picchu mountain (cf. Fig. 104).

Figure 106. *Huaca* E1, southeastern face of the stone.

Figure 107. *Huaca* E2, southern face, approx. 25' high.

Figure 108. *Huaca* E3, eastern face, approx. 6'3" high.

Figure 109. *Huaca* E4, northern face, approx. 7' high.

Figure 110. *Huaca* E5, northern face, approx. 4' high.

Figure 111. *Huaca* E6, eastern face is adjacent to stairs, approx. 5' high.

Figure 112. *Huaca* E7 with two people seated on the *huaca*.

Figure 113. *Huaca* E7, alignment with San Gabriel to the east, approx. 10' high

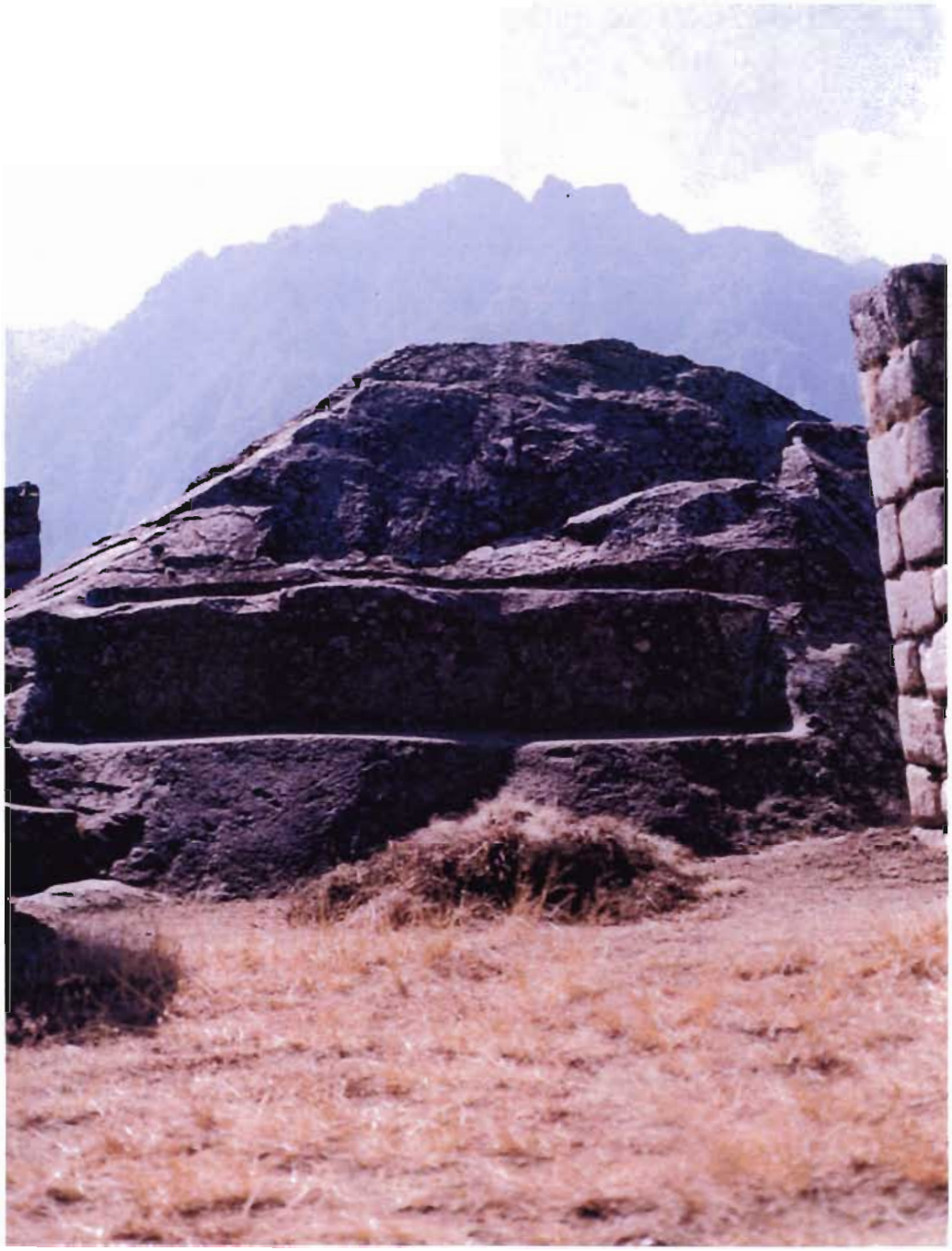


Figure 114. *Huaca* E7, alignment with San Gabriel to the east.

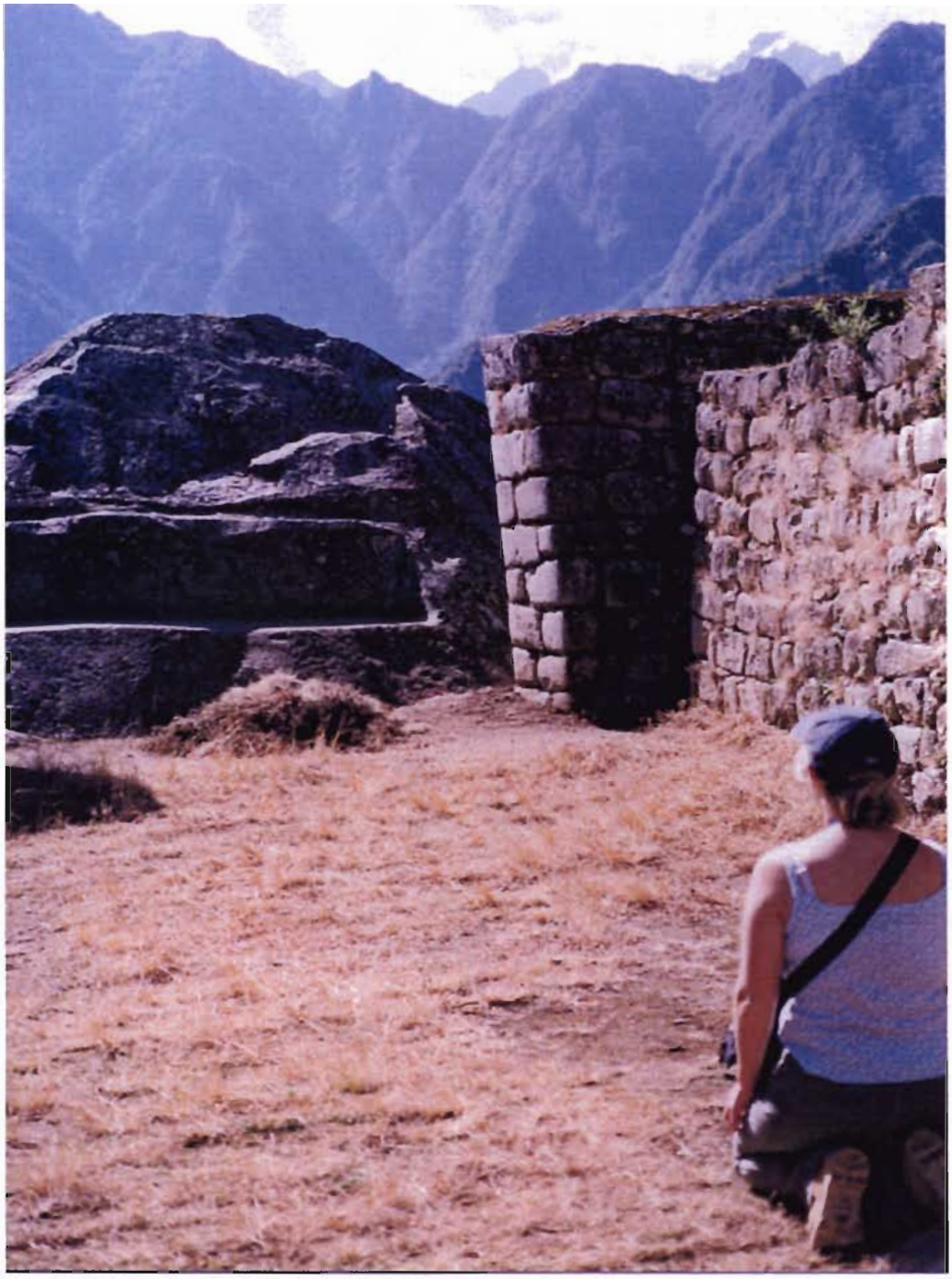


Figure 115. Kneeling position in courtyard facing *Huaca* E7.

Figure 116. *Huaca* E7, alignment with Huayna Picchu to the north, from a standing position.

Figure 117. *Huaca* E7, alignment with Machu Picchu mountain range to the southwest, from a standing position.

Figure 118. *Huaca* E8, northeastern face, approx. 15' high.

Figure 119. *Huaca* E9, northern face, approx. 3'9" high.

Figure 120. *Huaca* E10, eastern face, approx. 6' high.

Figure 121. *Huaca* E10, northern face of the stone.

Figure 122. *Huaca* E11, southern face, each approx. 4" high.

Figure 123. *Huaca* E12, southwestern face, approx. 8' high.

Figure 124. *Huaca* E13, western face, approx. 14' high.

Figure 125. *Huaca* E14, southeastern face, approx. 15' high.

Figure 126. *Huacas* E15, E16, and E17 on the eastern side of Machu Picchu.

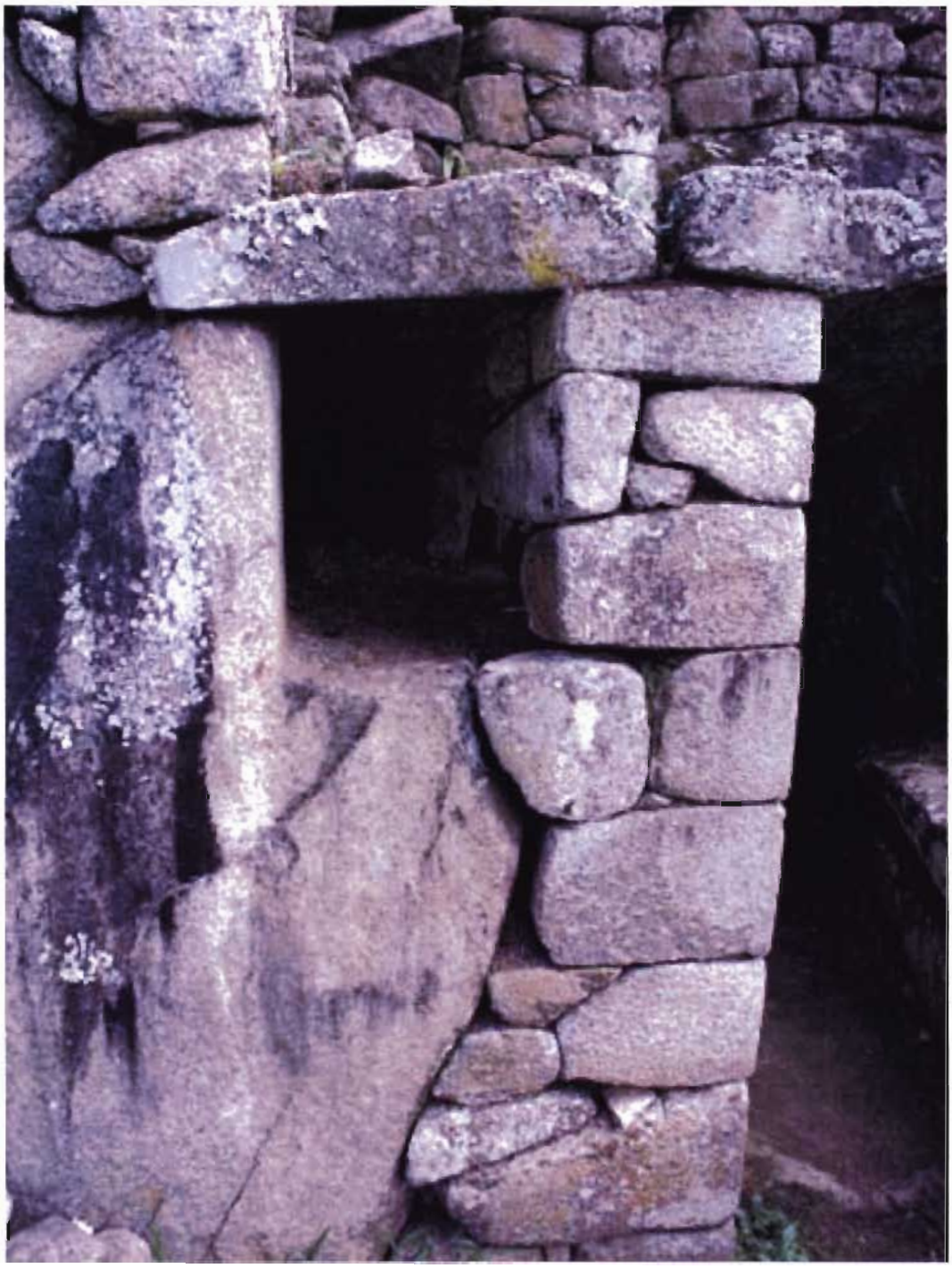


Figure 127. *Huaca* E15, eastern face of the stone.

Figure 128. *Huaca* E15, interior.

Figure 129. *Huaca* E16, alignment with Huayna Picchu to the northeast.

Figure 130. *Huaca* E16, kneeling position to view alignment with Huayna Picchu (cf. Fig. 129).

Figure 131. *Huaca* E17, northern face of the stone.

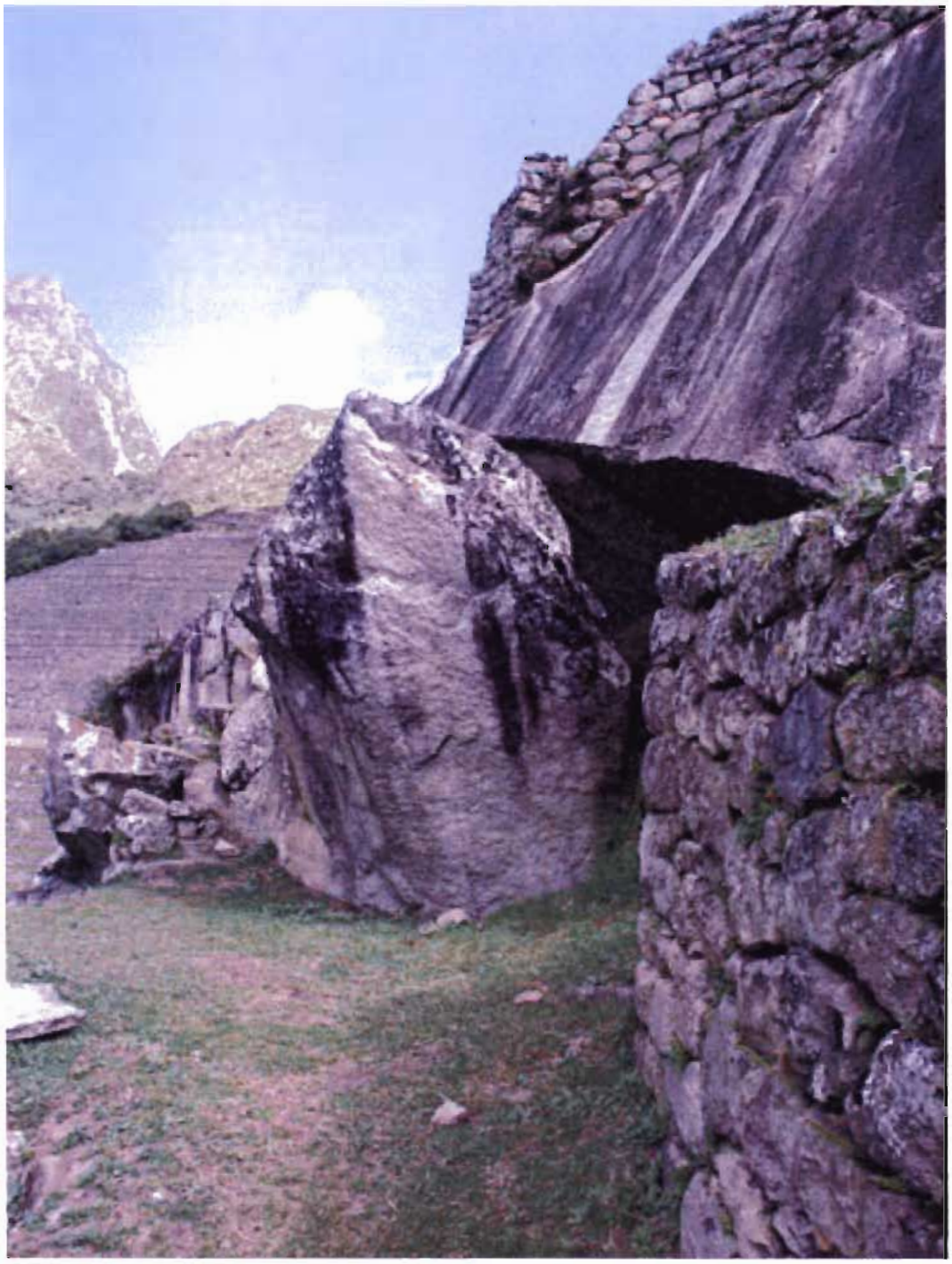


Figure 132. *Huaca* E17, southern face, approx. 12' high.

Figure 133. *Huaca* E17, alignment with Yanantin to the northeast.

Figure 134. *Huaca* E17, kneeling position to view alignment with Yanantin (cf. Fig. 133).

Figure 135. *Huaca* E18, southern face, approx. 12' high.

Figure 136. *Huaca* E18, interior.

Figure 137. *Huaca* E19, northern face, approx. 7' high.

Figure 138. *Huaca* E20, southern face, approx. 2'8" high.

Figure 139. *Huaca* E21, eastern face, top portion of stone, approx. 4' high.

Figure 140. *Huaca* E21, alignment with Yanantin to the northeast.

Figure 141. *Huaca* E21, eastern face of the stone.

Figure 142. *Huaca* E21.

Figure 143. *Huaca* E21, interior.

Figure 144. *Huaca* E22, eastern face of the stone.

Figure 145. *Huaca* E23, northern face, approx. 2' high.

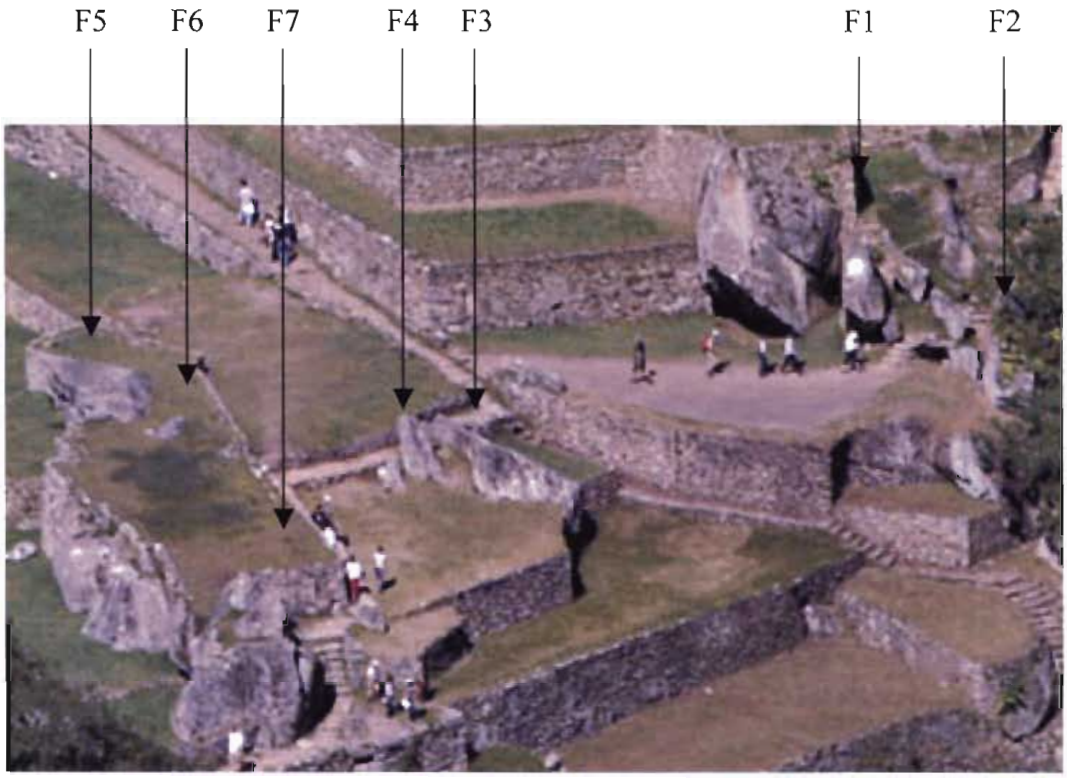


Figure 146. Section of Machu Picchu illustrating *Huaca*s F1 - F7.

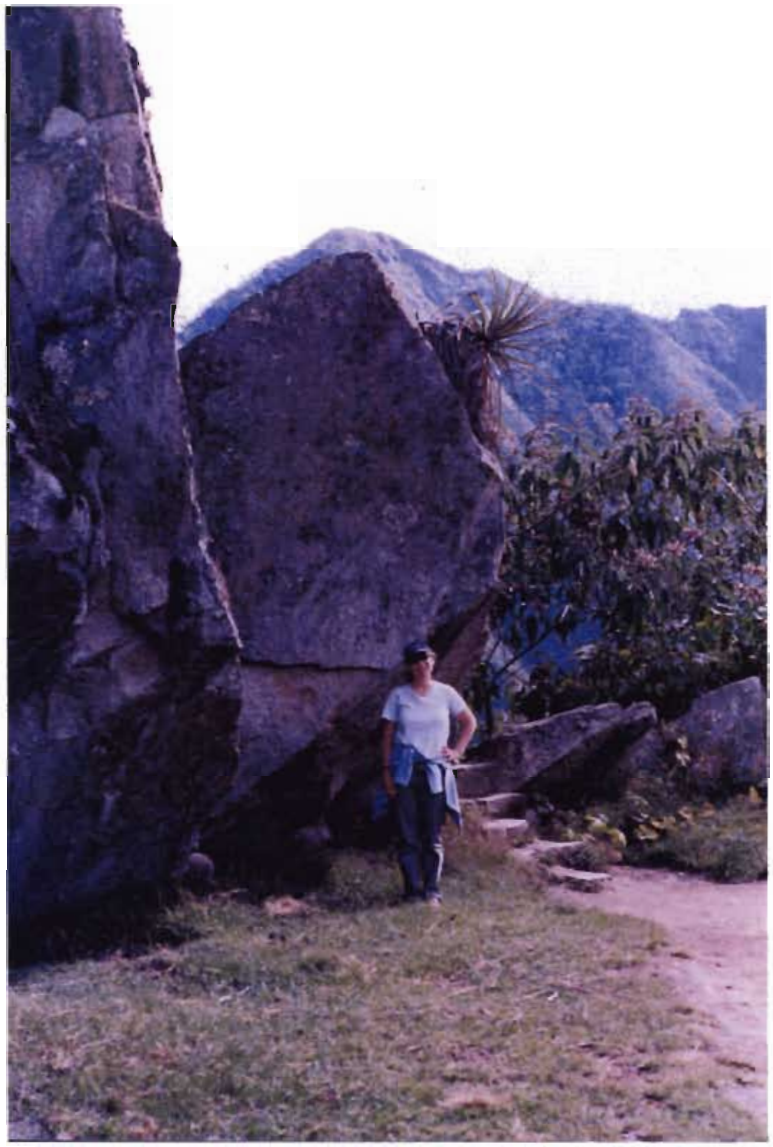


Figure 147. *Huaca* F1, approx. 12'6" high, alignment with San Miguel to the northwest.

Figure 148. *Huaca* F2, approx. 4' high, alignment with San Miguel to the northwest.

Figure 149. *Huaca* F2, kneeling position to view alignment with San Miguel (cf. Fig. 148).

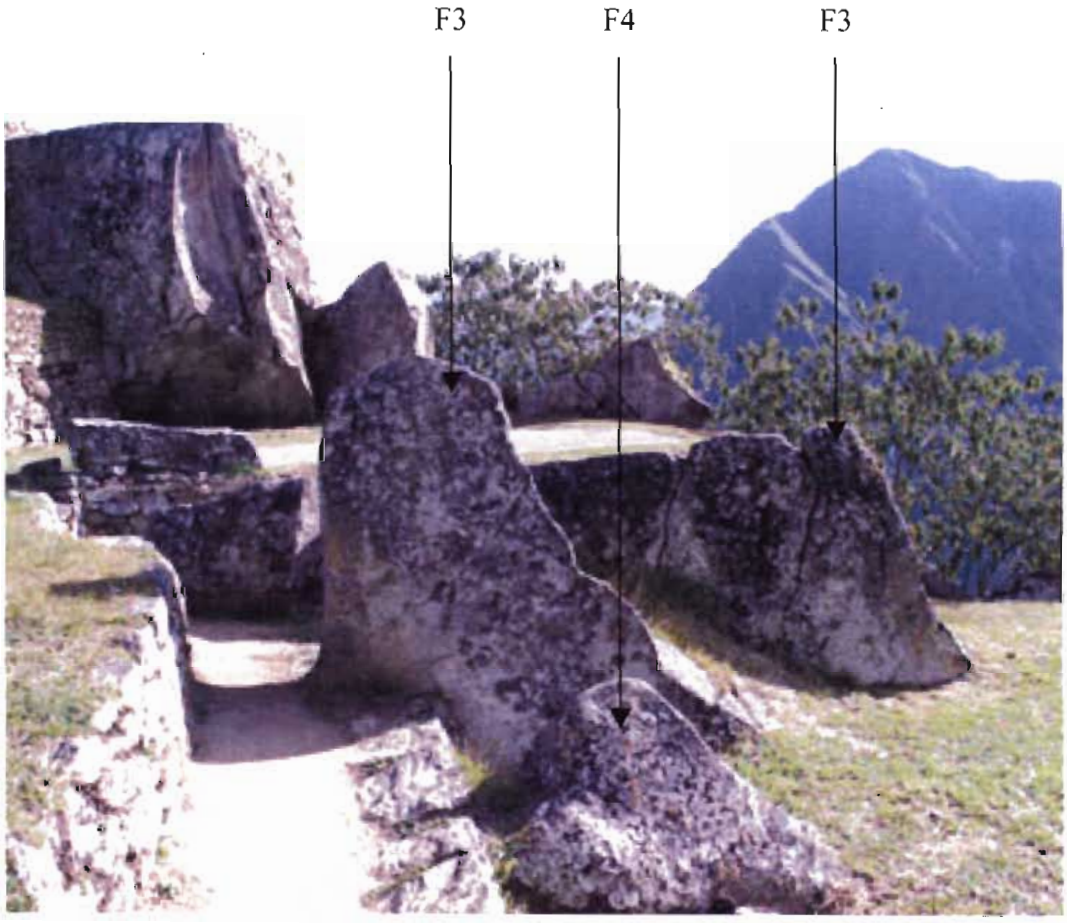


Figure 150. *Huacas* F3 (approx. 6'6" high) and F4 (approx. 2' high), eastern face of the stones.

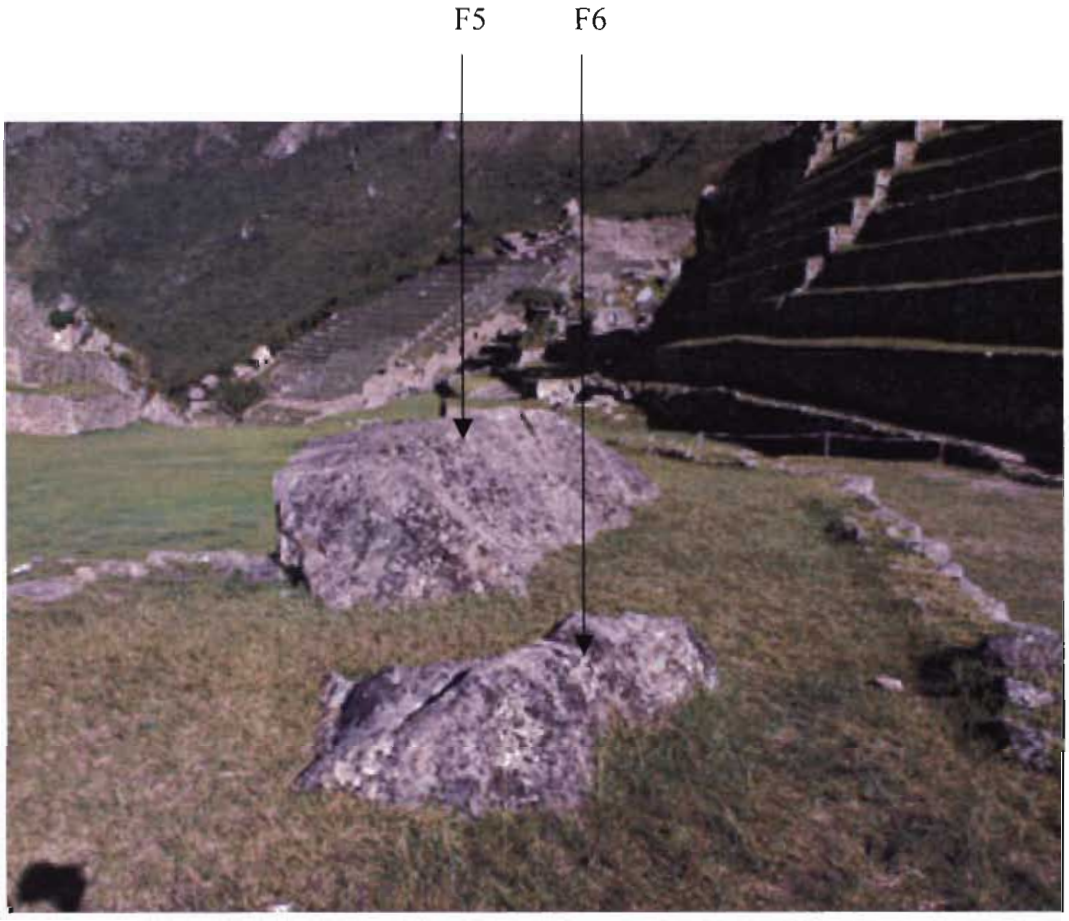


Figure 151. *Huacas* F5 (approx. 2'6" high) and F6 (approx. 1' high), southern face of the stones.

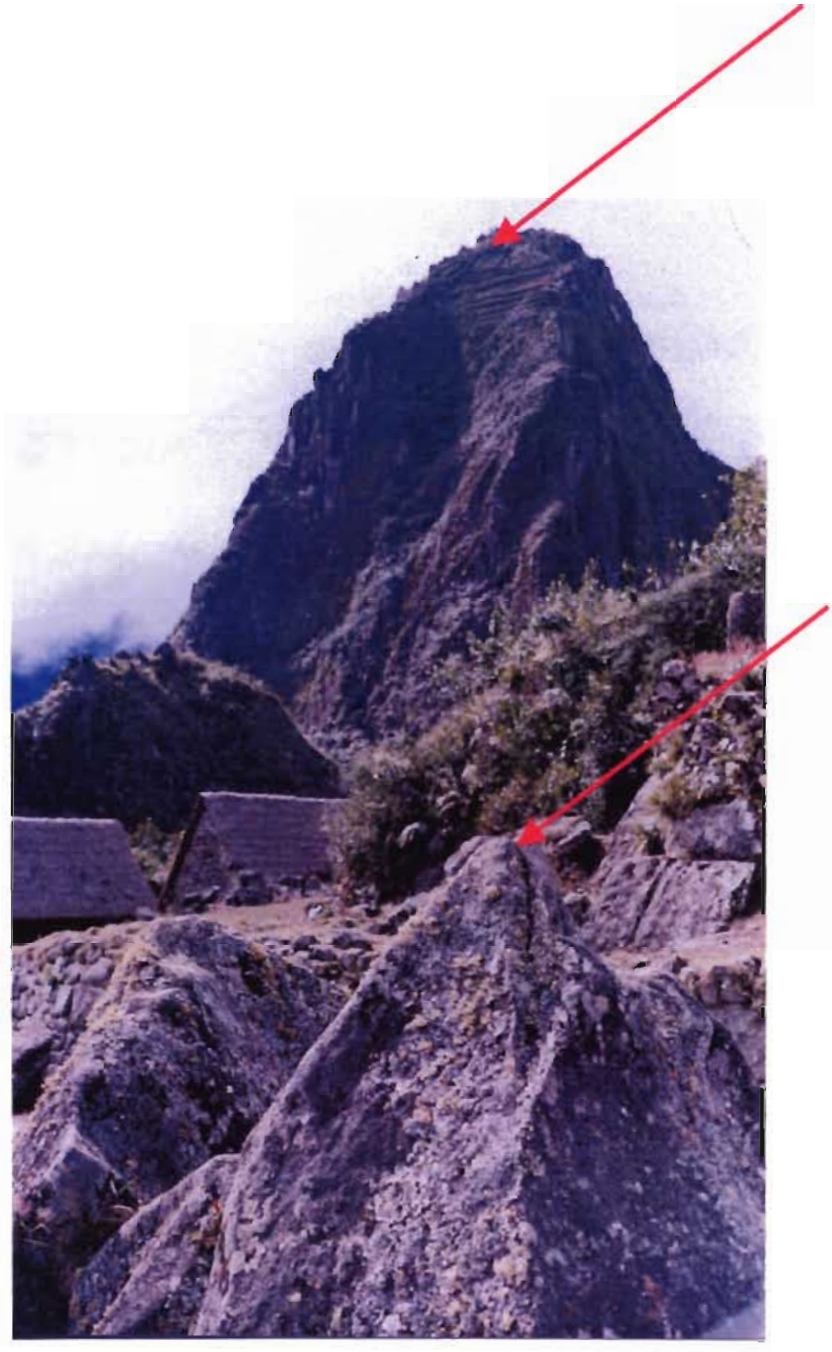


Figure 152. *Huaca* F7, alignment with Huayna Picchu to the north.

Figure 153. *Huaca* F7, seated position to view alignment with Huayna Picchu.

Figure 154. *Huaca* F7, eastern face of the stone.

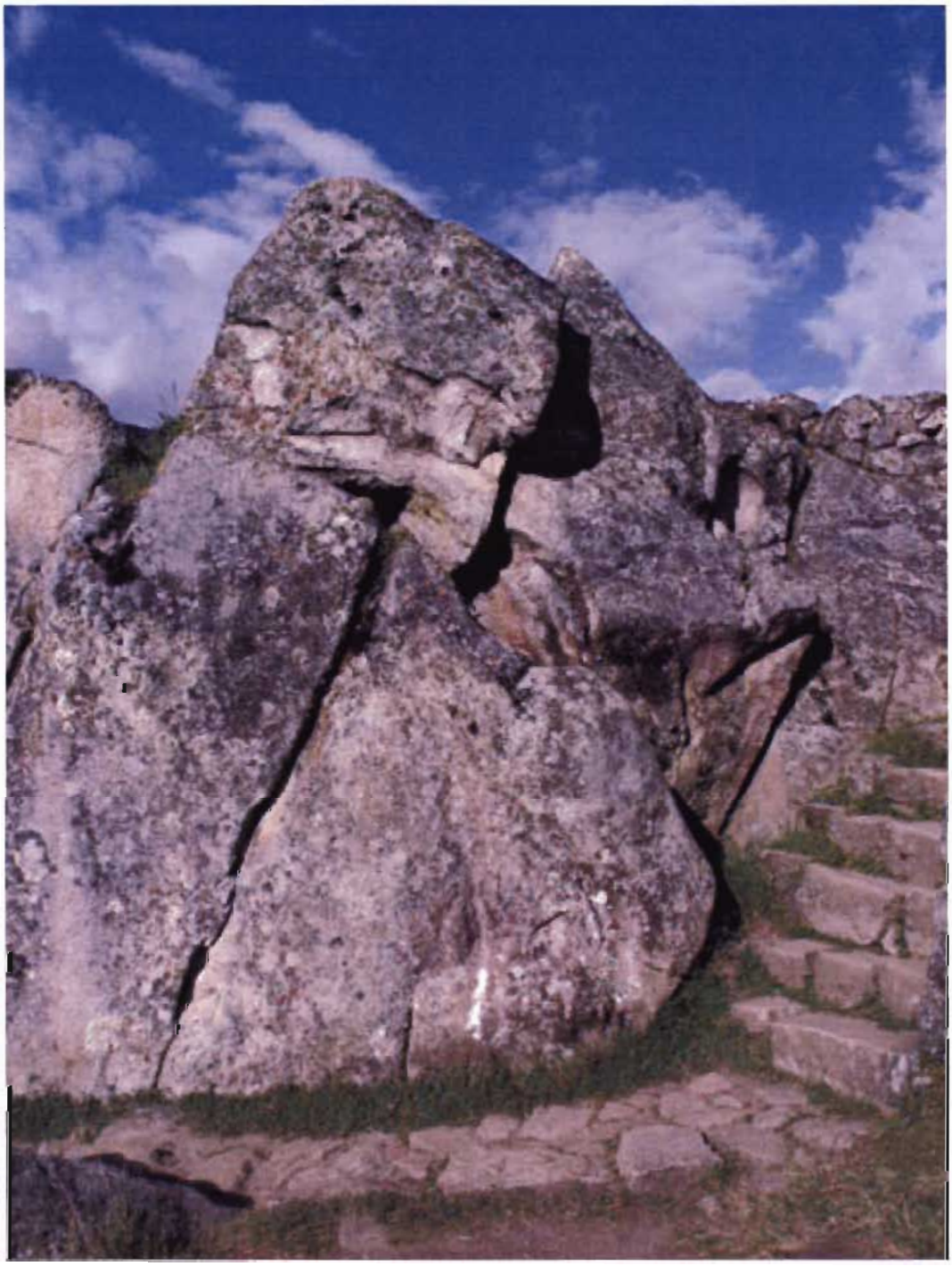


Figure 155. *Huaca* F7, western face, approx. 7'4" high.

Figure 156. *Huaca* F8, approx. 9' high, alignment with Yanantin to the northeast.

Figure 157. *Huaca* F8, alignment with Pumasillo to the west.

Figure 158. *Huaca* F9, approx. 12' high, alignment with Yanantin to the northeast.

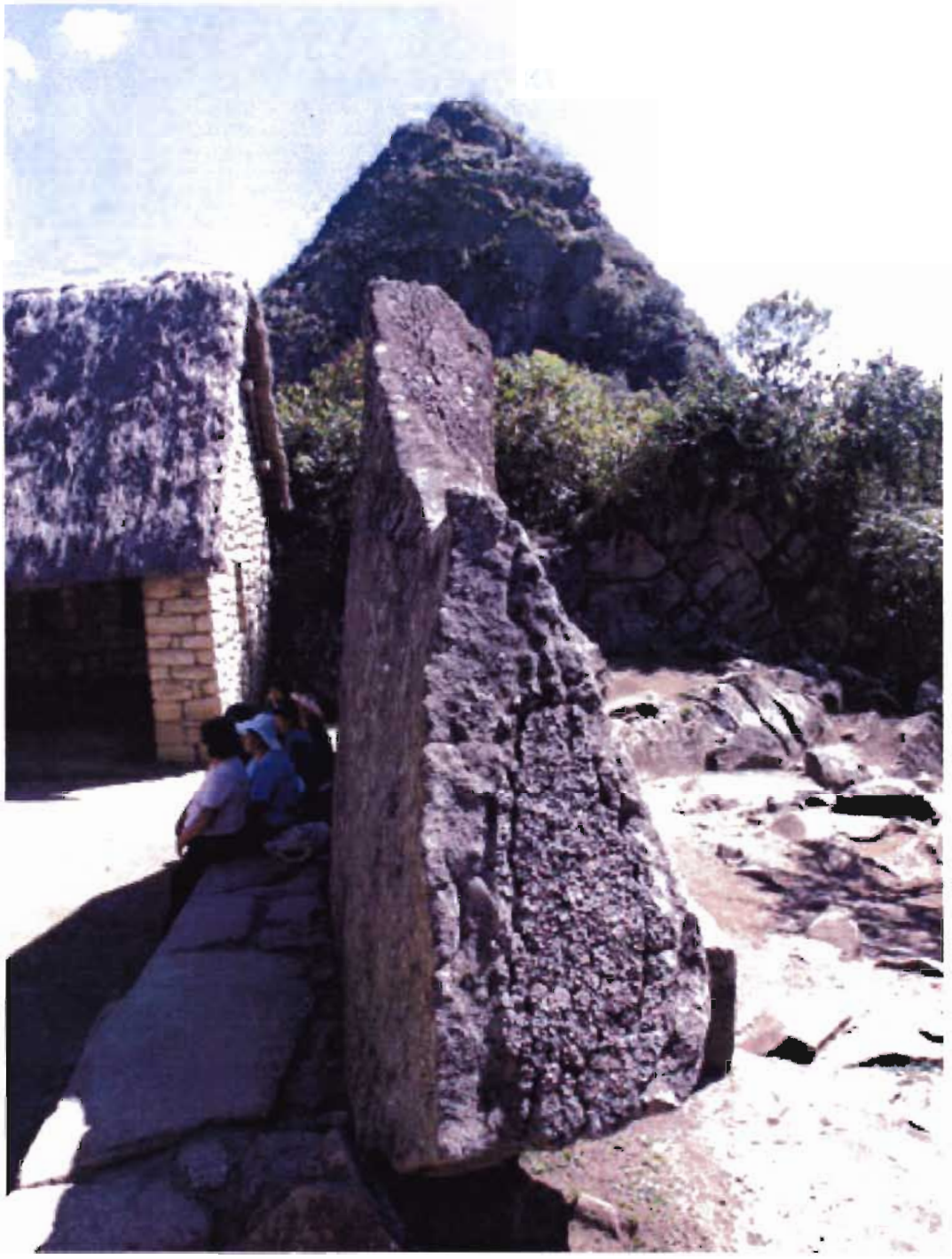


Figure 159. *Huaca* F9, alignment with Uña Huayna Picchu to the north.

Figure 160. *Huaca* F9, western face of the stone.

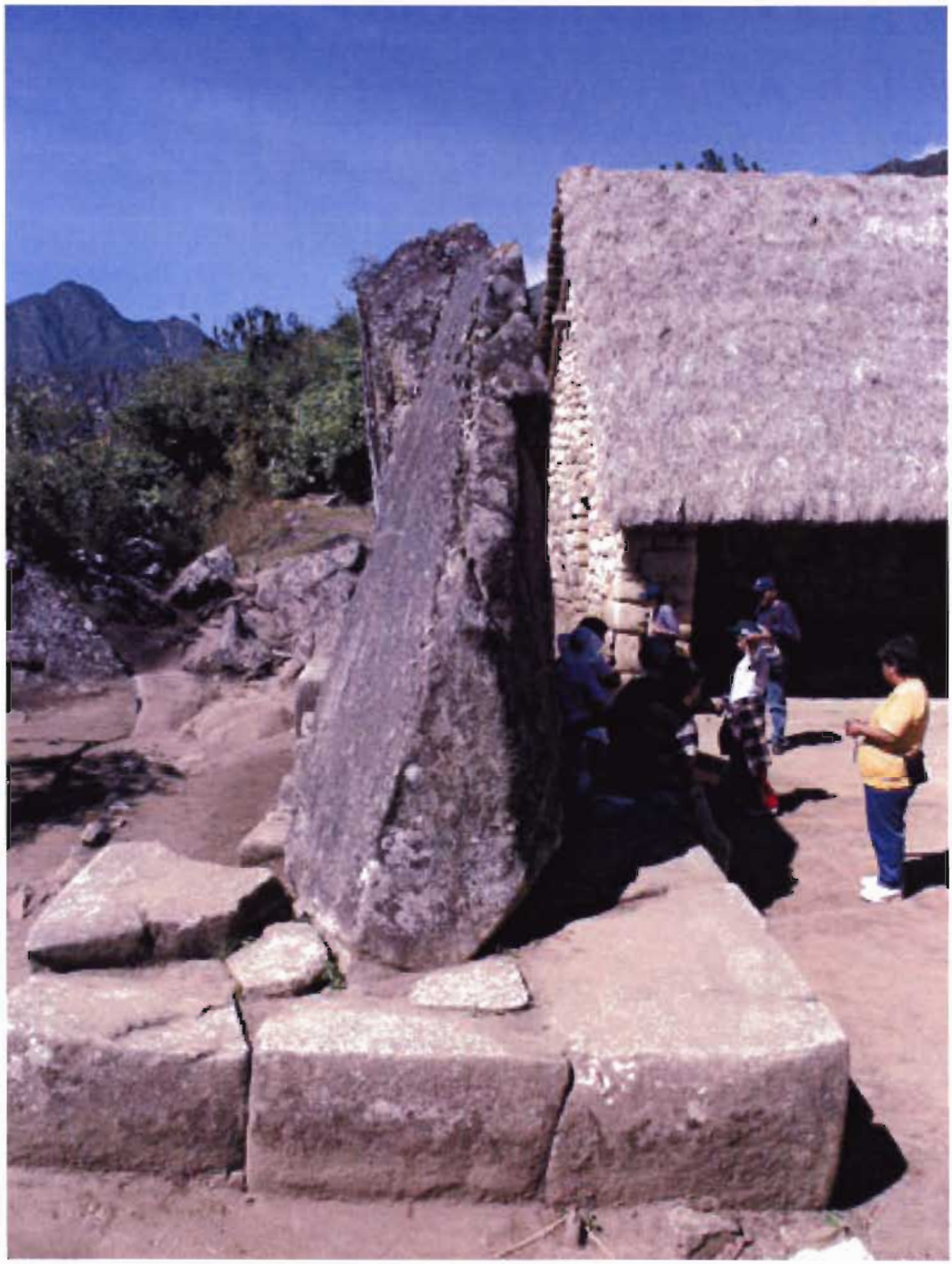


Figure 161. *Huaca* F9, southern face of the stone.

Figure 162. *Huaca* G1, northern face, approx. 2'4" high.

Figure 163. *Huaca* G1, seated position to view *Huaca* D10 (cf. Fig. 165).

Figure 164. *Huaca* G1 in left foreground and structure opposite.

Figure 165. View through window of structure opposite *Huaca* G1.

Figure 166. *Huaca* G2, northern face of the stone.

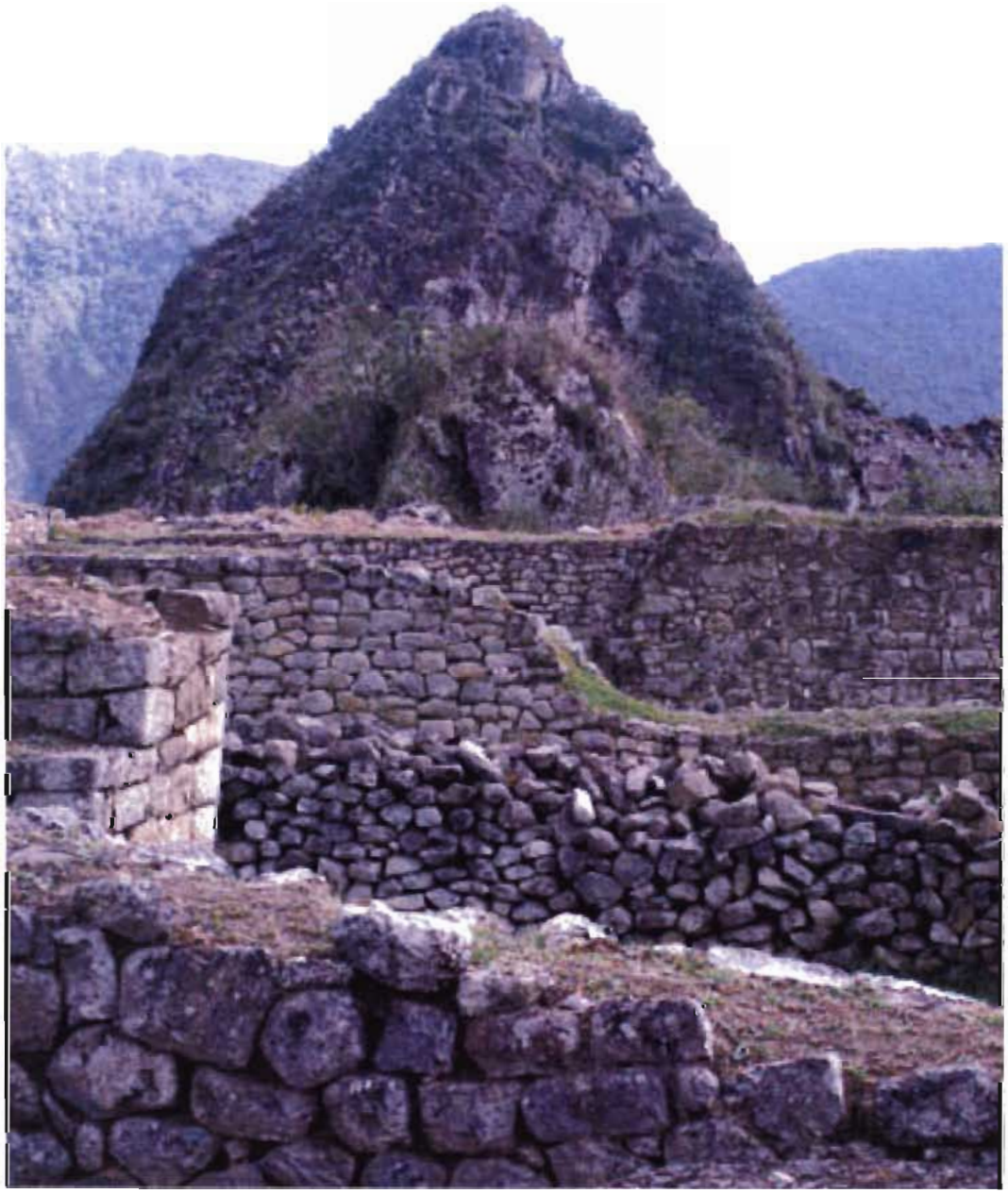


Figure 167. *Huaca* G2, alignment with Uña Huayna Picchu to the north.

Figure 168. *Huaca* G3, western face, approx. 3' high.

Figure 169. *Huaca* G4, western face, approx. 3'9" high.

Figure 170. *Huaca* G5, southern face, approx. 4' high.

Figure 171. *Huaca* G5, alignment with Machu Picchu mountain to the south.

Figure 172. *Huaca* G6, eastern face, approx. 2'6" high.

Figure 173. *Huaca* G7, southern face, approx. 3'4" high.

Figure 174. *Huaca* G8, eastern face, approx. 3'8" high.

Figure 175. *Huaca* G9, northeastern face, approx. 2'6" high.

Figure 176. *Huaca* G9, western face of the stone.

Figure 177. *Huaca* G10, northern face, approx. 7' high.

Figure 178. *Huaca* G10, western face of the stone.

Figure 179. *Huaca* G10, alignment with Putucusi to the east.

Figure 180. *Huaca* G11, northern face, approx. 7' high.

Figure 181. *Huaca* G11, southern face of the stone.

Figure 182. *Huaca* G11, kneeling position to view alignment with Machu Picchu mountain (cf. Fig. 183).

Figure 183. *Huaca* G11, alignment with Machu Picchu mountain to the southwest.

Figure 184. *Huaca* G12, northern face, approx. 3' high.

Figure 185. *Huaca* G12, southern face of the stone.

Figure 186. *Huaca* G13, eastern face, approx. 10' high.

Figure 187. *Huaca* G14, southwestern face, approx. 20' high.

Figure 188. *Huaca* G14, northern face of the stone.

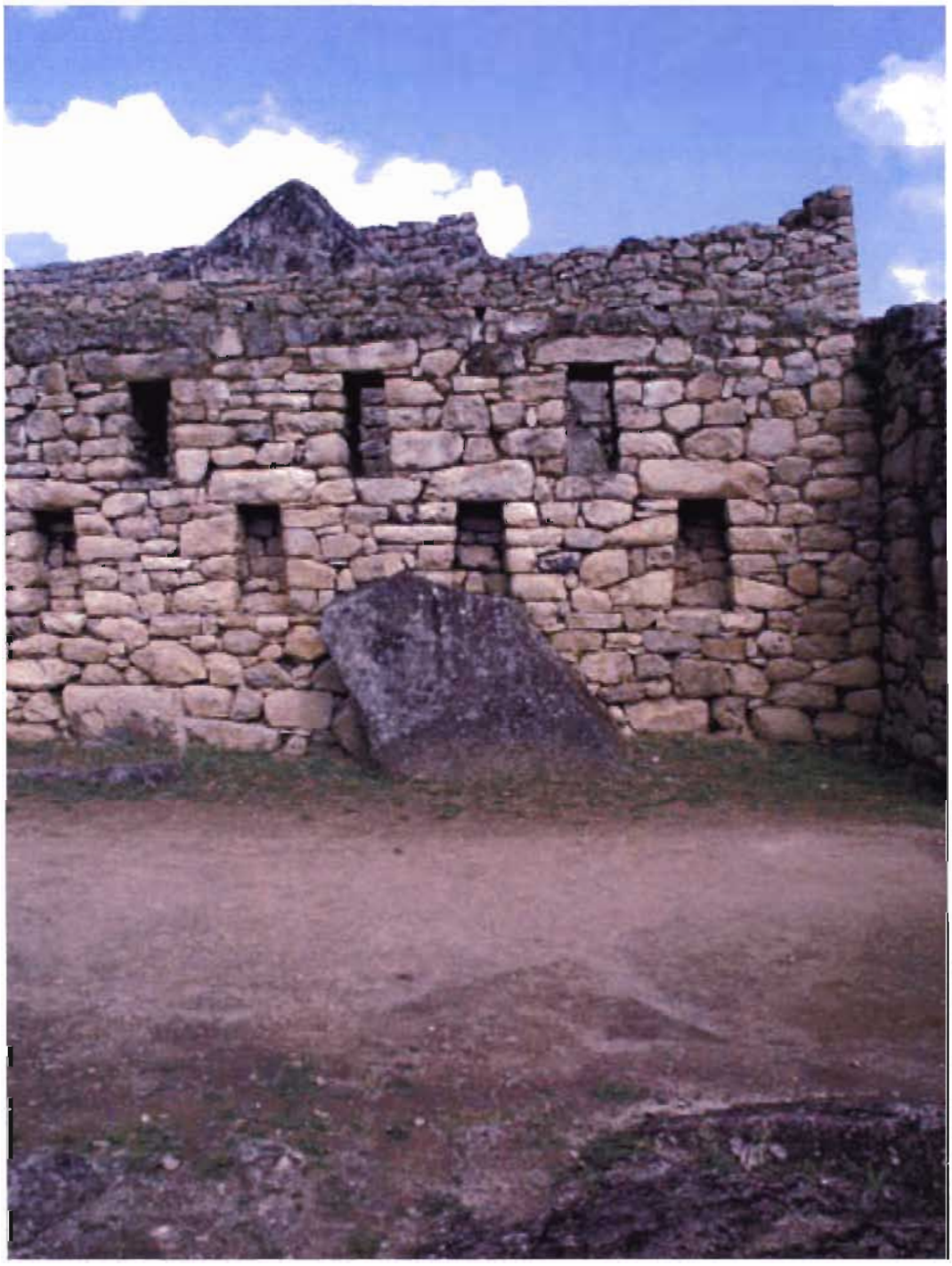


Figure 189. *Huaca* G15, western face, approx. 3'6" high.

Figure 190. *Huaca* G15, eastern face of the stone.

Figure 191. *Huaca* G15, embedded in the wall.

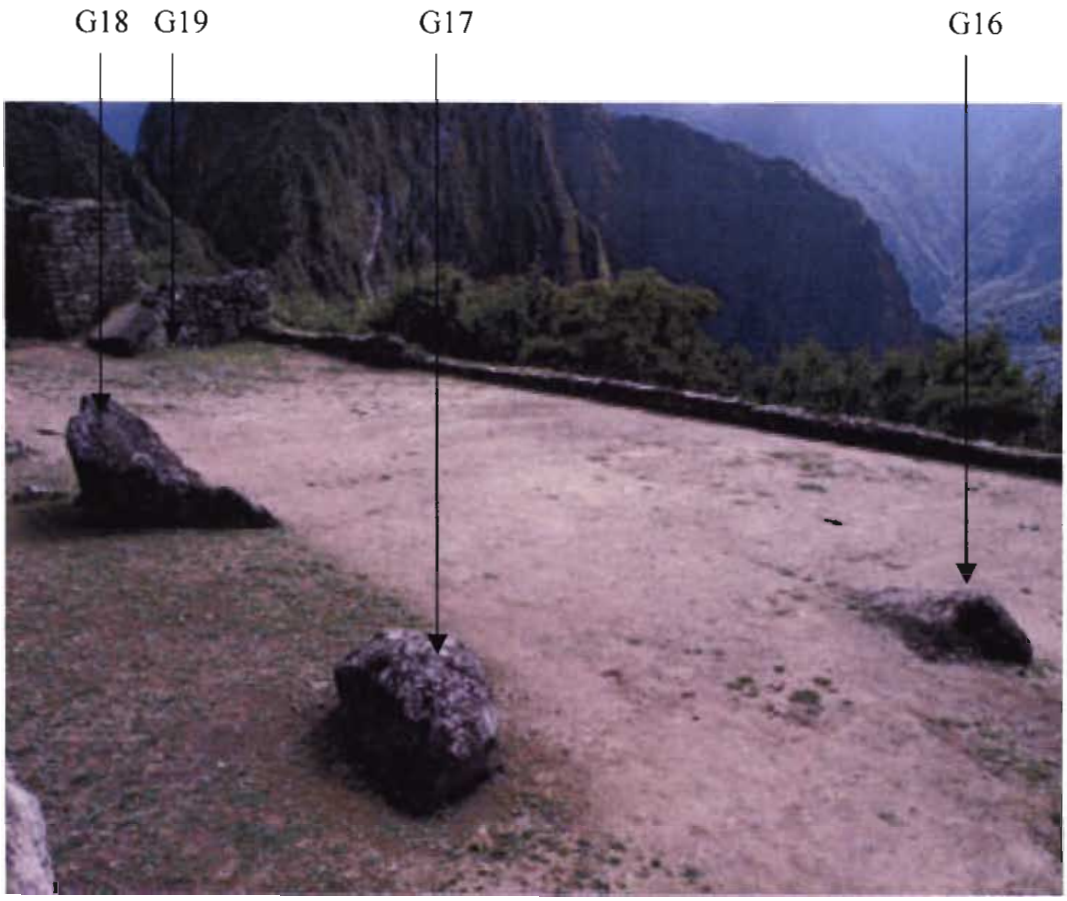


Figure 192. *Huacas* G16 - G19, on the eastern side of Machu Picchu.

Figure 193. *Huaca* G16, southwestern face, approx. 1'4" high.

Figure 194. *Huaca* G17, eastern face, approx. 2'3" high.

Figure 195. *Huaca* G18, northeastern face, approx. 1'6" high.

Figure 196. *Huaca* G19, northern face, approx. 3' high.

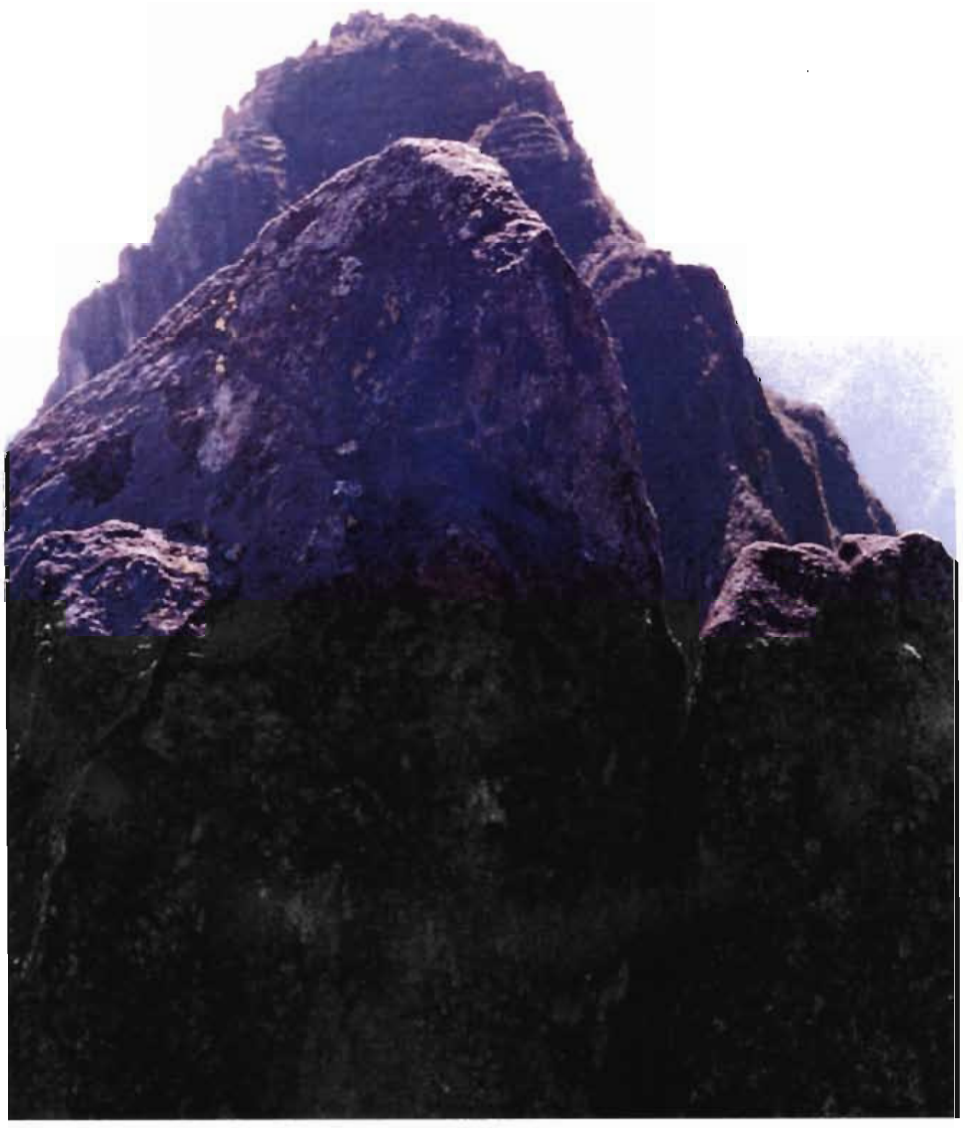


Figure 197. *Huaca* UP1, approx. 3'6" high, alignment with Huayna Picchu to the north.

Figure 198. *Huaca* UP1, alignment with Putucusi to the east.

Figure 199. *Huaca* UP2, southern face, approx. 2' high.

Figure 200. *Huaca* UP2, alignment with Veronica to the east.

Figure 201. *Huaca* HP1, also known as the "Temple of the Moon," northeastern face of Huayna Picchu.

Figure 202. *Huaca* HP2, eastern face, approx. 4'6" high.

Figure 203. *Huaca* HP2, view towards the Yanantin mountain range to the northeast.

Figure 204. *Huaca* HP3, southwestern face, approx. 2' high.

Figure 205. *Huaca* HP3, detail of the carving on the stone.

Figure 206. *Huaca* HP4, northwestern face, approx. 2' high.

Figure 207. *Huaca* HP4, detail showing carved repository.

Figure 208. *Huaca* HP5, within structure, southeastern side of Huayna Picchu.

Figure 209. *Huaca* HP5, northern face, approx. 1'8" high.

Figure 210. *Huaca* HP6, approx. 6' high, alignment with San Miguel to the south.

Figure 211. *Huaca* HP6, standing position to view alignment with San Miguel (cf. Fig. 210).

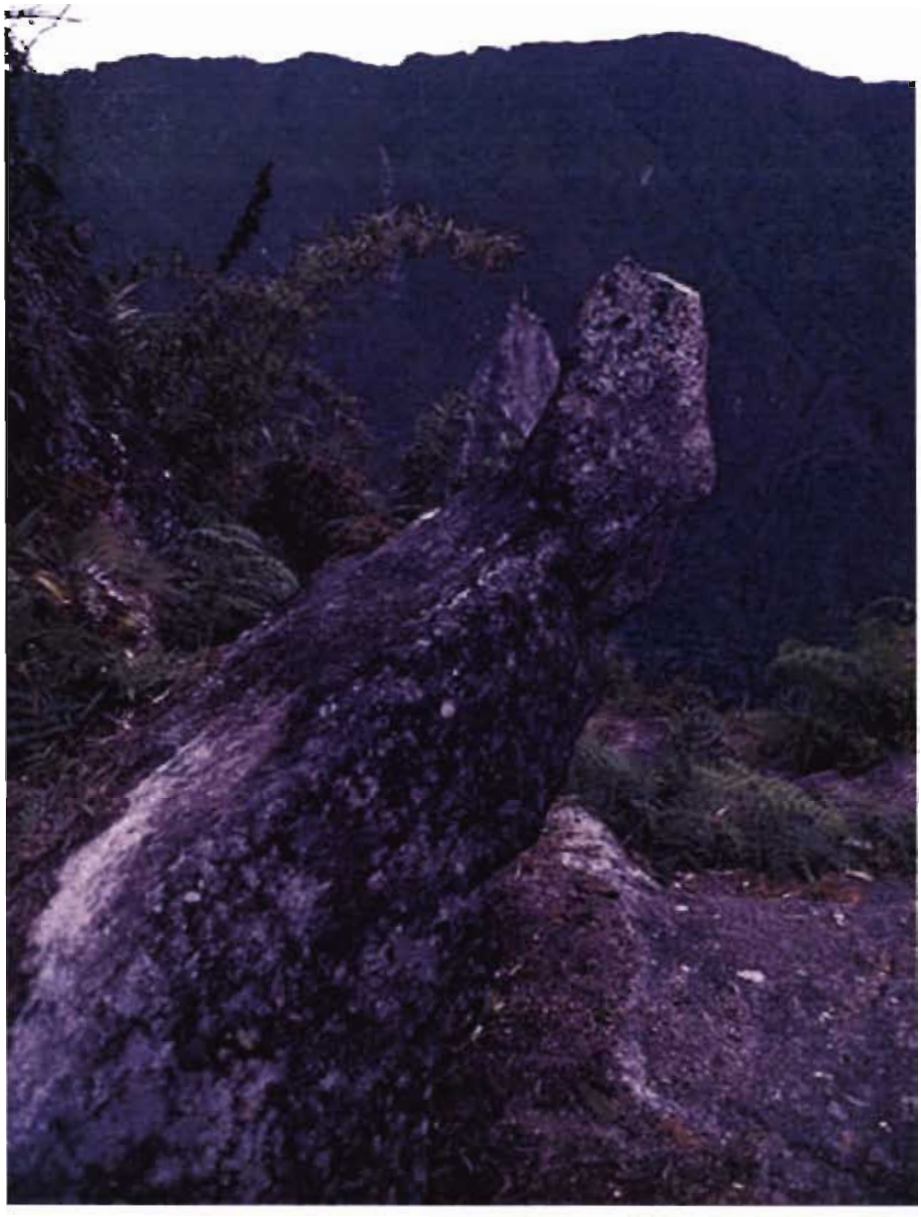


Figure 212. *Huaca* HP7, northeastern face of the stone.

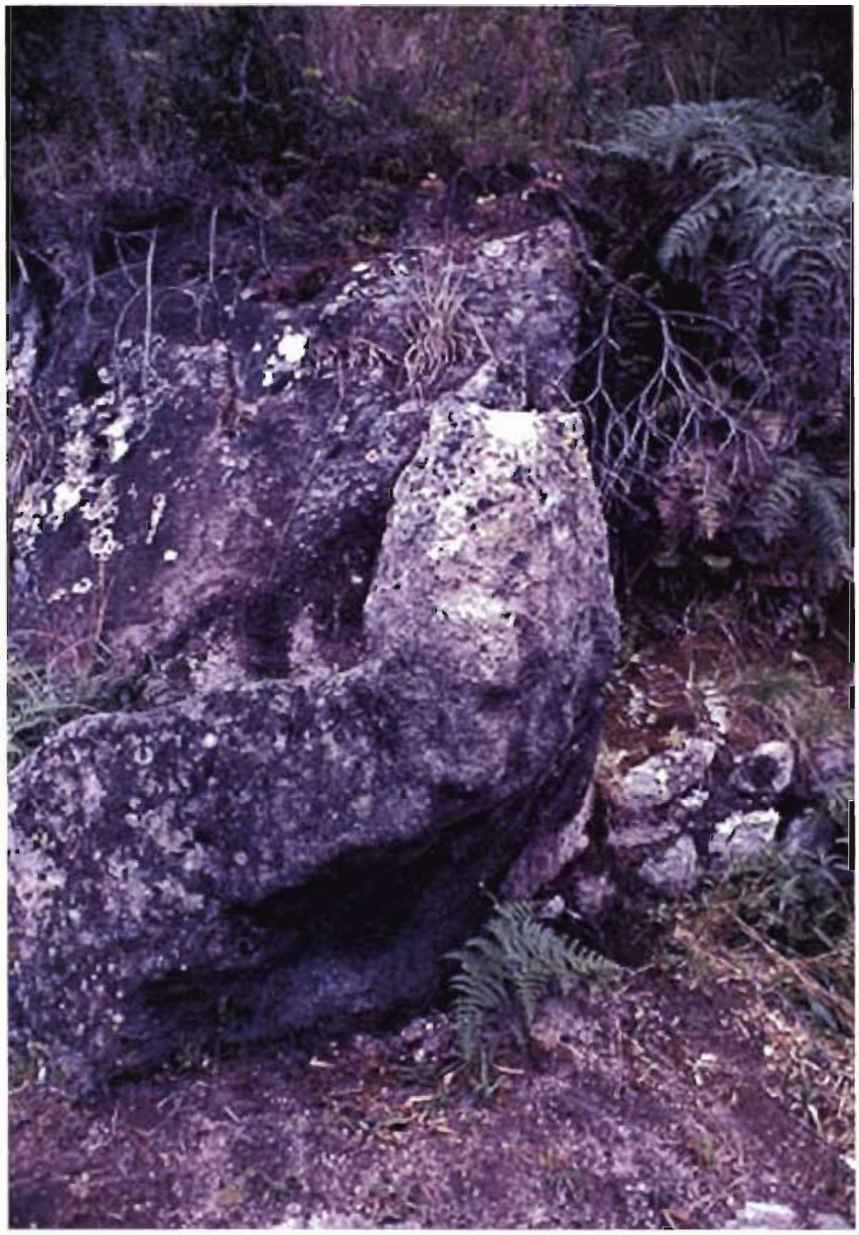


Figure 213. *Huaca* HP7.

Figure 214. View towards the northeast, *Huaca* HP7 (foreground) and HP8 (middle ground).

Figure 215. View from *Huaca* HP9, towards the summit of Huayna Picchu.

Figure 216. *Huaca* HP9, northeastern side of Huayna Picchu near summit.

Figure 217. *Huaca* HP9, alignment with Yanantin mountain range to northeast.

Figure 218. *Huaca* HP10, alignment with Machu Picchu mountain to the south.

Figure 219. *Huaca* HP11, from above, approx. 2'6" high.

Figure 220. *Huaca* HP11, southwestern side of Huayna Picchu.

Figure 221. *Huaca* HP12, cave (photo center) on the southwestern side of Huayna Picchu.

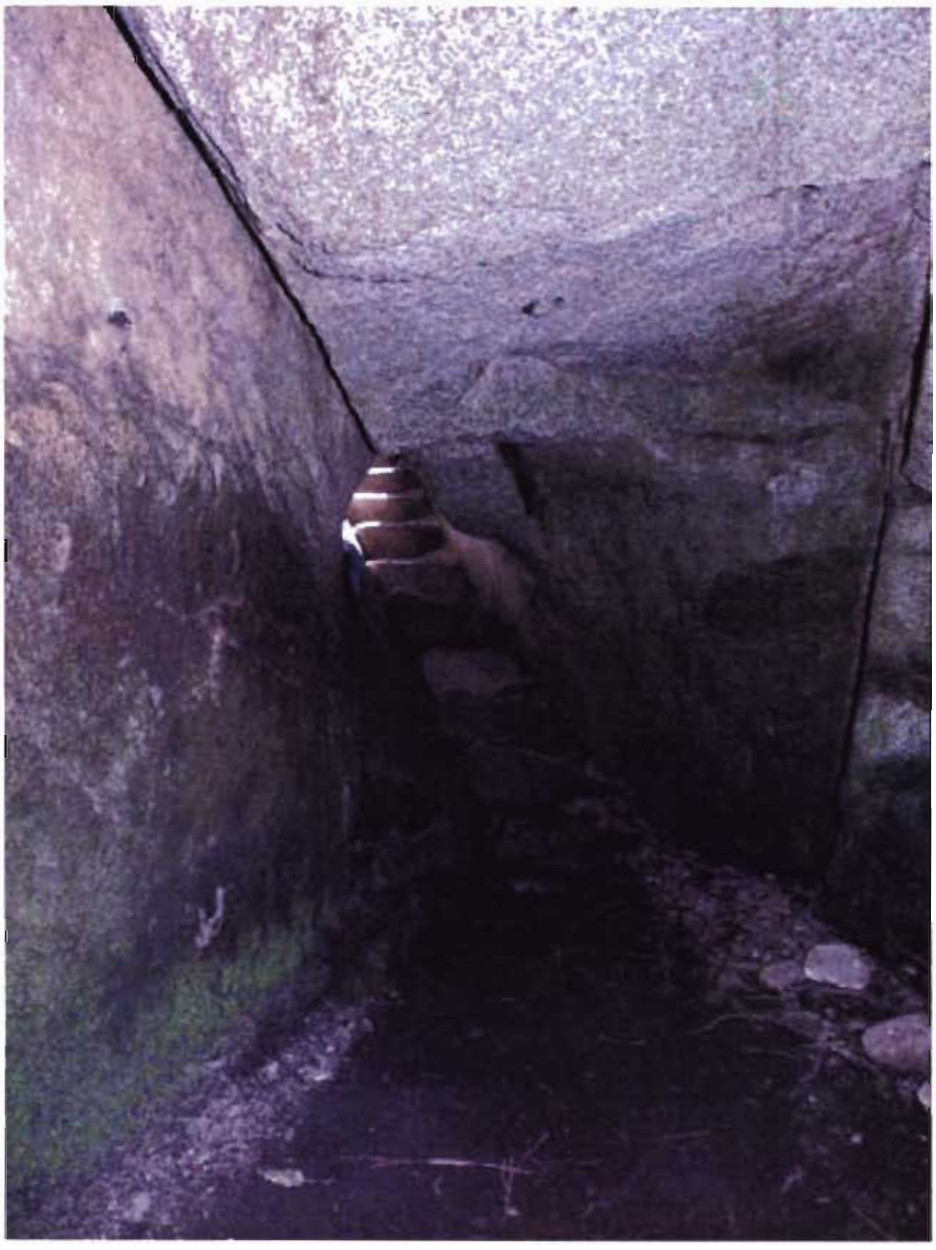


Figure 222. *Huaca* HP12, interior of the cave.

Figure 223. *Huaca* HP13, approx. 3'8" high, alignment with Machu Picchu mountain to the south.

Figure 224. *Huaca* HP13, northeastern face of the stone.

Figure 225. *Huaca* HP13, alignment with San Miguel to the northwest.

Figure 226. *Huaca* HP14.

Figure 227. *Huaca* HP14, alignment with San Miguel to the northwest.

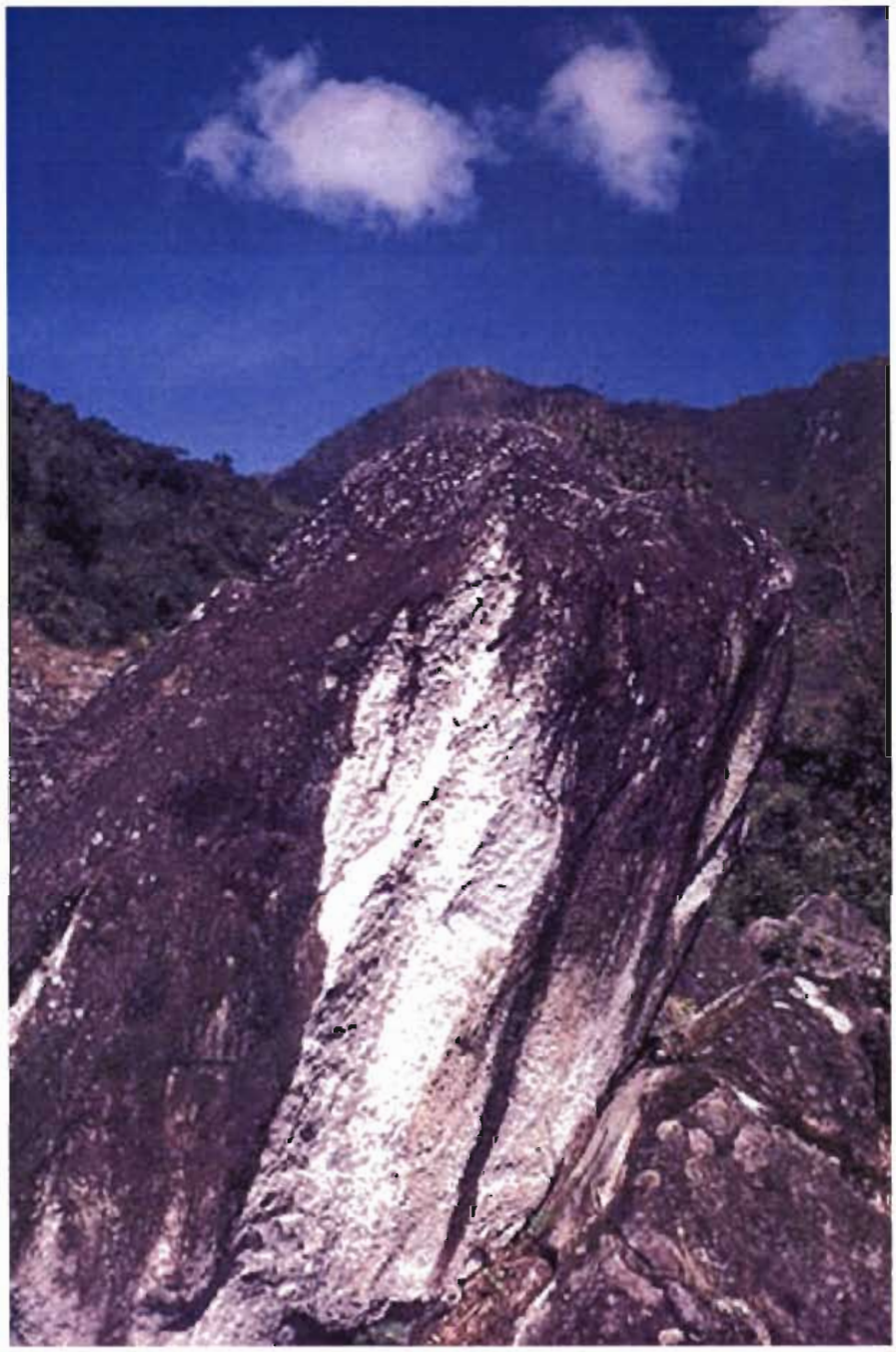


Figure 228. *Huaca* HP15, alignment with San Miguel to the northwest.

Vita

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